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NOVEMBER • 1923

Vol. XXI. No. 11

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California State Journal of Medicine

OWNED AND PUBLISHED MONTHLY BY THE CALIFORNIA MEDICAL ASSOCIATION

BALBOA BUILDING, SECOND AND MARKET STREETS, SAN FRANCISCO

Editor	W. E. MUSGRAVE, M. D.
Secretary	EMMA W. POPE, M. D.
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VOL. XXI

NOVEMBER, 1923

No. 11

ORIGINAL ARTICLES

RESPONSIBILITY FOR STATEMENTS AND CONCLUSIONS IN ORIGINAL ARTICLES

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THE BIRTH RATE: A FACTOR IN NATIONAL WELFARE*

By LUDWIG A. EMGE, M. D.

(From the Department of Obstetrics and Gynecology, Stanford University, School of Medicine.)

It is not within the scope of this address to present to you statistics on birth and death rates with their bewildering maze of figures so confusing to the uninitiated. Its purpose is to point out to you certain basic factors that influence the birth rate in this country, which is of such importance to the welfare of this nation.

The average citizen knows little and often cares less about the growth of the nation. He is satisfied to find out through the censors that the population has increased, but he does not take the trouble to inform himself as to the source of supply which produced this increase. A few of our magazine writers have from time to time sounded a warning in regard to the insufficient number of births as compared to the number of deaths in this country. Although many individuals are reached by these publications, it is doubtful to my mind how far this information has penetrated into the population at large.

It requires the efforts of certain bodies of men and women to take upon themselves the burden of

missionary work in this field of mass education. The physician, for one, is especially fitted to take upon himself or herself the task to preach a gospel of a sane sexual life in regard to copulation and conception. This missionary work, when interwoven with the daily practice of medicine, must ultimately lead to a better information of all classes in regard to fertility and fecundity of the nation. This mission must reach young and old, single and married, until the population has realized to the fullest extent that a good average birth rate determines the maintenance of the race, while a declining birth rate ultimately leads to the decadence of the race, regardless of its accumulated wealth and its achievements.

The fact is that our birth rate is at a standstill and too low as compared to the death rate. There are a number of factors which have brought on this condition which are not generally appreciated, and I dare say are not even sufficiently realized by our own profession. I shall attempt to briefly point out to you some of the principal factors involved.

It has been said that an increase in the general intelligence of a nation leads to a decrease in birth rate. This is an assumption and not a fact. I only point to Russia. As long as the intelligent classes ruled, even if we do not approve their methods of government, Russia's economic status before the revolution was such that the average family could afford and was willing to produce children in excess of the death rate. It is unnecessary to point out to you what happened when the intelligent classes were destroyed. The dreadful result is only too well known to all of us.

Intelligence, in a general sense, rather favors fertility, although it may to some degree depress fecundity. This is best observed in academic communities where the number of children is most often two and seldom more than three to each family. While on the surface this would indicate that intelligence is interfering with normal production, this factor is offset by a lesser number of childless marriages and a lower infant death rate. Furthermore, here we have to deal with an offspring which is better physically and mentally fit to withstand disease and the reverses of life.

Although the poorer and less intelligent classes are faster breeders in general, it must not be forgotten that the infant and children's death rate is considerably higher and increases in a direct ratio to the total number of children for every family. Emma Duke cites an increase of death rate from 108.5 per 1000 in two-children families to 176.4

* Chairman's address at the meeting of the Section on Obstetrics and Gynecology, at the Fifty-Second Annual Session of the California Medical Association, San Francisco, June, 1923.

per 1000 in seven to eight-children families. Alice Hamilton's figures for one of Chicago's poor districts are even higher. Here, the death rate per 1000 rises from 118 for four-children families to 291 for eight-children families. Naturally, lower intelligence goes here hand in hand with economic want, and it is the combined influence that causes the enormous loss of life among the children of the poor.

Let us pause for a moment and quickly survey the present situation in this country as regards births and deaths.

Above all, there is a decided drop in fecundity of our native women. Foreign women are generally very fruitful. Only one in twenty is infertile as compared to our native white women of whom one in eight is childless. I quote Stone, who stated, in 1916, that residence reduces fertility. He points out that the fertility of the second generation is reduced from 6.5 per cent to 5.3 per cent, while in native white women, with both parents born in this country, infertility had reached 13.1 per cent (1916). This reduction in fertility and fecundity is the result of our living standards and by no means the result of poverty.

I make this latter statement because I believe that the control of the birth rate lies entirely in the hands of our people. Undeniable is the fact that relative sterility, by which I mean the wilful prevention of fertilization, is becoming more and more prevalent among all classes. This is the age of excitement, of new philosophies of life such as single moral standards and of female emancipation. It has created a greater demand by all classes for luxuries of life. It has produced a generation which thoughtlessly and selfishly disregards the duty of married life of producing a reasonable number of children not always for want of economic necessities, but in order to satisfy the ever-growing desire for the excitements of this age of speed and greed. Gibbons called it "the gospel of comfort" which has a firm hold on our people and which must be considered as one of the most important factors that has led to a stationary birth rate without in the least influencing the death rate.

Proof for this statement may be found in foreign and native statistics. If economic want alone would be the chief reason, the poorer classes should certainly have the lowest birth rates. In fact, the reverse is true. It is the middle class that makes the poorer showing.

It was Bertillon who pointed out that the annual birth rate between the ages of 15 and 50 for Paris, Berlin, Vienna, and London was much higher in the poor than in the rich quarters, showing an average of seventy points in favor of the poor quarters. English statistics prove that the birth rate falls as the income increases. In days gone by, the average fertility of a woman was estimated at ten conceptions by Matthews Duncan. Even if this figure is cut in half today, it is still two to three points above the average fecundity of all women of this country. In the registration area we had in 1920, 3.3 as the total average number of children ever born for each family, with 2.9 total number of living children. In California in the same year, 2.7 was the total average number of

children for each family ever born, with 2.4 as the total number of children living.

In 1920 only 68.5 births were registered per 1000 female population for the entire registration area, while in California only 56.5 births were registered per 1000 female population. In the total registration area, as well as in California, the colored female population other than negroes showed a rate from two to four times higher than that of white women. I do not wish to be an alarmist, but if this colored population will multiply this rapidly, and by necessity, I can see when its economic influence upon the white race will make itself felt stringently within two more generations.

Late marriages have become quite common among our native men and women. This naturally must lead to a shortened period of fecundity. The husband's age has little to do with this. It requires a delay of about forty years on the part of the husband in order to decrease the number of children by one child, while every year of delay means a reduction of the limited period of maturity for the wife. Thus three years' delay results theoretically in one child less for this marriage.

Unquestionably, many marriages are entered into today only with the definite understanding that conception (fecundity) must be postponed. This may be for economic, selfish, or ambitious reasons. Next to selfish reasons cited, the economic problem is the most important because it is not very likely that the cost of living of this period will materially decrease. This problem, therefore, concerns the State and the nation at large. It is a problem that the Government must deal with. In fact, it is the most vital material problem of the nation in this generation, although it has not been regarded so. Most of us feel satisfied to learn from the census that our population at large has increased. But we overlook entirely that immigration has filled the gaps, and often with peoples of such low standards of intelligence and morals that they cannot be considered as a desirable admixture for the native American white race.

Next to this factor of wilful sterility we must consider congenital and acquired sterility. There were in 1920 in these United States approximately 2,000,000 sterile couples still within the age of potential child-bearing (Meaker, 1922). About every tenth marriage was childless. The influence of this on the birth rate is tremendous, when one realizes that every one of these infertile marriages means an approximate loss of three children to the nation. In 1916, when there were recorded over 1,000,000 marriages, the ultimate loss to the nation from infertility was 300,000 children, of which at least 250,000 would have lived to be added to our population.

Acquired sterility must be primarily charged to venereal diseases, the responsibility for which is about equally divided between male and female. Syphilis, for instance, constitutes a greater menace to infant life than the infectious diseases of childhood. In many large centers, at least from one-fourth to one-third of all stillbirths must be attributed to this disease (Knowlton). Stillbirths or early infant deaths of whatever cause, constitute a potential sterility. A woman who habitually aborts or

produces stillbirths, or whose infants die, is materially sterile. Therefore, this problem is of national importance. It cannot be solved merely by State health supervision, the failure of which was demonstrated in Wisconsin. It is a problem which can be solved only by general education. It requires to teach the parents to safeguard their offspring and to instruct the offspring how to protect themselves against the ever-present menace of venereal disease. Medical supervision will always be insufficient. Cults and narrowness of public opinion will block the sincerest efforts of our profession. The pressure to protect the offspring must come from within.

Education and propaganda by the Government, aided by teachers and physicians, and supported by the press at large, are to my mind the only means to reduce sterile marriages resulting from venereal disease, only too often innocently contracted after marriage. A better registration and follow-up system for venereal disease by the individual States must ultimately come, although at present it is very unsatisfactory on account of the fastly shifting population of our larger cities. Solitary efforts by States are more or less a waste. The problem is a national one in which all classes are concerned. Once we reach the point where parents demand a clean bill of health from the prospective son-in-law obtained through a neutral source, we have made the greatest step forward in health protection against venereal disease. Once this nation learns to speak frankly about venereal diseases, individual health protection will be demanded by every person before entering into marriage. The solution of this problem may still be far off, and it is here where our missionary work will do the greatest amount of good. This problem is distinctly one of preventive medicine and of greater importance to the welfare of the nation than all the other infectious diseases combined.

There are then three great factors which effect the normal increase of our native population: the moral influence which reduces our birth rate for selfish reasons; the material influence which reduces it for economic reasons; and the physical influence or disease which lowers our birth rate for reasons of acquired sterility. Each of these problems concerns us both as citizens and physicians, and it is, therefore, our solemn duty to the nation to educate the people in the principles of a sane sexual life and to join hands with the State and National Governments, as well as with the educators at large, to re-establish sound moral and economic standards so that our great nation may be spared the fate of decadence in years to come.

(Stanford University Hospital, San Francisco.)

The Relation of Infections of the Upper Respiratory Tract to Pyelitis.—In four cases of pyelitis secondary to upper respiratory infection, reported on by Henry F. Helmholz and Frances Milliken, Rochester, Minn. (Journal A. M. A., October 6, 1923), the organism causing the primary infection did not reveal a tendency to localize in the kidney when injected intravenously into rabbits. No evidence was found that would tend to show that the primary infection acts specifically; but it probably produces a general lowering of resistance of the urinary tract to the colon bacillus, and gives it an opportunity to develop and produce inflammation.

THE INCIDENCE OF VENEREAL DISEASE IN PATIENTS SUFFERING WITH STERILITY*

By ALFRED BAKER SPALDING, M. D.
(From the Department of Obstetrics and Gynecology, Stanford University, School of Medicine.)

The histories of 200 patients complaining of sterility have been reviewed for the purpose of ascertaining the incidence of venereal disease in the group. One hundred and nine histories were of clinic patients.

The group of clinic patients were admitted to the Women's Clinic of Stanford University, School of Medicine, from June, 1919, to June, 1920, and were studied as a special problem by C. O. Sappington, who was then chief of clinic. This was just at the transition period in regard to routine Wassermann tests of clinic patients, and for that reason only sixty-three of the group were tested. Again, it is possible that the history of the patient influenced somewhat the request for the test.

Ninety-one histories were of private patients, most of whom were seen before the need for special venereal investigation in cases of sterility was appreciated. For this reason, only four wives and two husbands in this group were tested for Wassermann reaction.

Of the total sixty-seven patients tested, eleven patients gave a positive Wassermann reaction, or an incidence of 16 per cent. Carr and Saunders, in a recent publication, state that syphilis does not produce sterility. The question arises, is this a fair statement of fact?

To answer the question, it seems justifiable to compare the Wassermann reactions of our relatively small group of sterile patients with other groups of patients where our experience has been much greater.

Table I gives the results obtained with 882 patients tested in the gynecological ward of Lane Hospital, including 121 abortions and 15 cases of ectopic pregnancy. Of this number, there were 60 positive reports, or an incidence of 6.6 per cent syphilis.

Table II gives 43 positive reports in 1153 patients delivered in the obstetrical ward over the same period of time, or an incidence of 3.7 per cent.

These two tables show that, with normally pregnant patients, the incidence of syphilis is about half that found among the non-pregnant patients. Without going more deeply into the question as regards the relative parity of the two groups and the age question, it seems that with sterility there should be expected a higher incidence of syphilis to counterbalance the low incidence seen with the obstetrical patients. This view is strengthened somewhat by comparing the Wassermann reports of primary and secondary sterility.

Of the 200 patients studied, 136 were primary; that is, they had never been pregnant. Of these, 8 of 47 examined gave positive Wassermann reports, or 17 per cent. Of 64 secondary, who some years previously had had a child or an abortion,

*Read to the Section on Obstetrics and Gynecology at the Fifty-second Annual Session of the California Medical Association.

3 gave positive tests in 20 examined, an incidence of 14 per cent.

Moreover, a survey of the literature seems to substantiate the fact that the above figures approximate. Jeans concludes that from 10 per cent to 20 per cent of adult males and 10 per cent of married women are syphilitic, while 10 per cent of all marriages involve a syphilitic individual. Whitney found 21.8 per cent positive Wassermann among 1695 clinic patients. Solomon states that "sterility is common in syphilitic families, although it is impossible to show an absolute percentage due to syphilis alone." Vedder says that from 10 to 28 per cent of unskilled laboring men from 18 to 40 years of age are syphilitic.

From these statements and from our experience it seems justifiable to conclude that syphilis is a common factor in the clinical complex of sterility, and may reasonably be expected to show an incidence of 16 per cent.

The second part of this paper has to deal with the incidence of gonorrhoea in patients suffering with sterility. Here the problem of differentiating gonorrhoeal infections from streptococcus and other types of pathogenic infections is very difficult.

For some time the Public Health Laboratory has been using routinely the complement fixation test for gonorrhoea in the venereal ward at the San Francisco Hospital, and the results compare very favorably with the bacteriological findings. The test, however, has not as yet been adopted generally and has not as yet been used in the Stanford Clinic. The shortcomings of slide and cultural tests from pelvic secretions are too well known to need discussion. While positive reports are at times doubtful, negative reports are frequently worthless.

At the San Francisco Hospital, the laboratory work is most carefully and conscientiously carried out and patients are treated until at least three consecutive negative reports are returned. Nevertheless, all too frequently patients are returned for further treatment after leaving the hospital, supposedly free from Neisser infection.

For these reasons great reliance must be placed upon the clinical findings and in this paper patients with inflammation of Skene's glands, Bartholin's glands, the cervix, or the Fallopian tubes are included under the general class of pelvic inflammatory conditions as among these conditions must necessarily fall the cases of gonorrhoeal infections.

Accepting as true the clinical statement so frequent in textbooks, that infections of Skene's glands and Bartholin's glands are indicative of gonorrhoeal infection, it is interesting to see in Table III that 28, or 14 per cent, infections of Skene's glands have been noted with a slightly smaller number of infections of Bartholin's glands. One hundred and five, or over 50 per cent, showed cervicitis, while 60, or 30 per cent, gave evidence of tubo-ovarian infections.

At present, Rubin's test for tubal patency is a daily occurrence both in office and clinic practice, but it was not in use when the present series was studied. For that reason, only nine private

patients in this series have been so tested. (Table IV.) Of these nine patients, four, or 44½ per cent, showed closed tubes.

Forty-three patients, or 22½ per cent, either had had their appendix removed or were operated upon later for chronic appendicitis. This fact has an important bearing in estimating the incidence of tubal infection, but can hardly account for the 50 per cent cervical infections.

Sixty-three patients had retroversions of the uterus and twenty-seven were associated with myoma uteri. From an experience of more than 7000 pathological specimens examined in the laboratory for obstetrics and gynecology at Stanford, I have come to believe that fibroids in some way are associated with chronic infections and pelvic congestions. Moreover, the gross specimen frequently shows both fibroid and pelvic inflammation of the tubes existing together.

In regard to retroversions, the frequency of such complications in normal pregnancy and the failure so often to cure sterility by resort to uterine suspension has led me to believe that uncomplicated retroversion is in itself not a frequent cause for sterility. For these reasons, I believe that many of the retroversions and fibroids noted above were merely associations of the more evident factor, namely an accompanying pelvic infection.

The husband, as so often is the case in general practice, has been neglected in the present study of sterility. In the clinic the same practical difficulties exist as are to be noted in private practice. Either the husband is too occupied with his work to come to the clinic or he is indifferent, or as is often the case, he wishes his present ability and his past experiences with procreation to remain a closed book.

Only thirty-three of the 200 cases gave a condom test, of which sixteen, or 50 per cent, showed that regardless of the wife's condition the case was hopeless because of the condition of aspermia. Of these cases twelve gave a history of gonorrhoea and two of syphilis. (Table IV.)

CONCLUSIONS

1. With 200 patients complaining of sterility, 16 per cent of the patients examined gave a positive Wassermann reaction.
2. The positive Wassermann reaction was more frequently found with primary sterility than with secondary sterility.
3. Fourteen per cent showed infections of Skene's glands; 50 per cent cervicitis, and 30 per cent gave evidence of tubo-ovarian infections.
4. Sixteen, or 50 per cent, of thirty-three husbands examined showed a condition of aspermia.

TABLE I

ROUTINE WASSERMANN REPORTS Hospital Gynecology

Year	No. of Diagnosis	Negative	Positive	Per Cent Positive
1919	191	177	14	7.3
1920	196	185	11	5.6
1921	174	161	13	7.4
1922	217	199	18	8.2
1923—6 mo.	104	100	4	3.8
Total....	882	822	60	6.6

TABLE II
ROUTINE WASSERMANN REPORTS
Hospital Obstetrics

Year	No. of Diagnosis	Negative	Positive	Per Cent Positive
1919	289	280	9	3.1
1920	297	287	10	3.3
1921	243	232	11	4.5
1922	217	208	9	4.1
1923—6 mo.	107	103	4	3.7
Total....	1153	1110	43	3.7

TABLE III
STERILITY

	Primary		Secondary		Total	Per Cent
	Clinic	Private	Clinic	Private		
Number ...	83	53	26	38	200	
Infected ...	61	27	20	24	132	.66
Cured	9	2	0	7	18	.09
INFECTIONS						
Bartholinitis	5	9	1	6	21	.10
Skenitis ...	8	10	4	6	28	.14
Cervicitis ..	50	23	15	17	105	.52
Pelvic In- flammatory	30	13	9	8	60	.30
Appendicitis	19	13	3	8	43	.21
OTHER CONDITIONS						
Retroversions	26	12	11	14	63	.31
Fibroids ...	14	6	4	3	27	.13

TABLE IV
TESTS OF PATIENT AND HUSBAND FOR CAUSES OF STERILITY

	Primary		Secondary		Totals	
	Pt. Husb.	Pt. Husb.	Pt. Husb.	Pt. Husb.	Pt. Husb.	Pt. Husb.
Reubin Test.....	0	5	0	4	9	
Tubes Closed.....		3		1	4	
Wassermann Test.	47	0	16	4	67	2
" Positive	8	1*	3	0	11	2
Condom Test.....		5		6		33
Aspermla		3		5		16
Gonorrhoea		7*		3*		12

*No test made. Diagnosis based upon history only.

THE SIGNIFICANCE OF CERVICAL
PATHOLOGY IN STERILITY*

By ALBERT VICTOR PETTIT, M. D.
From the Department of Obstetrics and Gynecology,
Stanford University School of Medicine.

The material for this report has been collected from patients seen at Stanford women's clinic and from the private records of Professor Spalding. No attempt has been made to select particular types of cases and these records have been compiled just as the cases presented themselves, in order to obtain some idea of the relative frequency of the various lesions contributing to the production of sterility in the female. Only cervical conditions presented by the patients studied are considered.

In 230 sterile women examined, whose average age was twenty-nine years, and whose average period of sterility was five years, chronic infection of the cervix was present in 129, or 56 per cent, and of these 129 cases, seventy-two or 31 per cent, gave palpable evidence of internal pelvic inflammation. Undoubtedly, many more than this had internal pelvic inflammatory disease, for it is often not palpable. In thirty cases of chronic endocervicitis we found closed tubes by insufflation tests in twenty-two, or 73 per cent of cases. (Table I.)

Stenosis of the cervix appears as the possible cause of the sterility in eleven cases. The importance of cervical stenosis in the production of sterility is questionable, and alone is probably rarely a cause. In each of the eleven cases here reported, there were varying degrees of inflammation, apparently enough in each case to produce sufficient thick mucus to plug the stenotic canal.

The seven infantile cervixes (Table I) accompanied infantilism of the other organs of generation and probably should not be listed as a separate cause of sterility. An endocervical polyp was

the cause of sterility in one case. A glandular hyperplasia of the endometrium was also present. This patient became pregnant shortly after curettage of the uterus and cervix.

Forty-four of these cases were tested for tubal patency. Of fourteen tested who showed no signs of cervical infection, all tubes were found to be patent; in thirty infected cervixes, only eight showed patent tubes, while twenty-two admitted no gas whatever at several testings. The eight inflammatory cases with patent tubes probably owed their sterility to the cervical condition directly. The possibility of endometrial or ovarian inflammation is not excluded, however. (Table II.)

In a series of 125 cases, average age 26, with known cervical inflammation, forty-two were sterile. In each one of these cases a section of the cervix and a curettage specimen of endometrium were studied microscopically; in only sixteen was there any evidence of infection, thus showing the marked immunity of the endometrium even in the presence of cervical and tubal disease. (Table III.)

Infection of the intact cervix is practically always gonorrhoeal at its inception, often later being entirely replaced by other organisms; lacerations and contusions of the cervix which do not heal promptly predispose the cervical tissues to infection by other pyogenic organisms.

The presence of chronic infection in the glandular elements of the cervix changes the mucus secreted by the cervical glands into thick mucopurulent plugs which entangle the spermatozoa and also kills them. The reaction of the secretion is often changed from mildly alkaline to strongly acid, possibly contributing somewhat in reducing the vitality of the spermatozoa.

Local plugging of the cervical canal, however, is not the most important role played by cervical infections in producing sterility. The cervix is the distributing focus for practically all infections of the internal organs of generation. Lymphatic

*Read to the Section on Obstetrics and Gynecology at the Fifty-second Annual Session of the California Medical Association.

drainage from the mucous surface of the cervical canal is upward and outward through the musculature of the uterus toward the serous coat, from where the lymphatic vessels leave the uterine surface by way of the sacro-uterine and broad ligaments, and it is this path by which the infection reaches the pelvic organs. The milder infections of the cervical glands seem to cause the production of thicker mucus plugs, while the more virulent infections cause a more serious discharge but extend

to the adnexae earlier and with more disastrous results.

In these 230 sterile patients, pelvic inflammation seems to be the most important single condition causing sterility, showing 56 per cent infected. The indication is for early and thorough treatment of the cervix to prevent local barriers to the ingress of spermatozoa and to prevent internal extension of the infection which may cause permanent destruction of the generative organs.

TABLE I

STERILITY—230 CASES

Av. Duration Sterility 5 yrs	Average Age 29	Cervicitis 129 56%	Pelvic Inflammation 72 31.3%	Stenosis 11 4.7%	Infantile 7 3.0%	Polyp 1 0.4%
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TABLE II

TUBAL PATENCY RESULTS

44 Sterile Cases

	Number	Open Tubes	Closed
Cervix Clean	14	14	0
Cervix Infected	30	8	22

TABLE III

CERVICITIS—125 CASES

Average Age 26

Cervicitis	Pelvic Inflammation	Endometritis	Primary Sterility
125 100%	46 37%	16 13%	42 33.6%

THE ADNEXAL ORGANS IN RELATION TO STERILITY*

By C. W. ANDERSON, M. D., Los Angeles

The increased knowledge of the physiology and pathology of the ovary, which has come with the wonderful advances made in the study of the endocrine system, as well as the epoch-making contribution of Rubin to the diagnosis of tubal conditions, have given an unprecedented impetus to the study of the whole subject of sterility.

The tubes and ovaries play a very important part in the production of sterility and until comparatively recently the blame for almost all cases of sterility was laid at the door of the tubes.

I would like to discuss this subject under the headings:

1. Pathological conditions of the tubes and ovaries causing sterility.
2. Their diagnosis.
3. Their treatment.

It is hardly necessary for me to say, by way of introduction that one of the conditions necessary for impregnation is a tube offering an open channel for the ovum to descend and the spermatozoon to ascend, and that any condition which interferes with these functions is a potential cause of sterility.

Infantilism occasionally manifests itself in a persistence of the spirally twisted condition of the tube, which is common in early life. This may cause sufficient obstruction in the lumen of the tube to prevent the free passage of the ovum or spermatozoon and hence be a cause of sterility. In most cases of this kind evidences of infantilism are present in other parts of the generative system, and make it all the more improbable that pregnancy can occur.

Acute appendicitis in childhood or early womanhood may be a factor in producing sterility in later

life. Graves (Archives of Surgery 1921-2, 315) has particularly called attention to this subject. He believes that very frequently the serofibrinous exudate from the region of the inflamed appendix gravitates to the pelvis and sets up sufficient peritonitis to cause occlusion of the abdominal ostium of the tube. This would explain many of our cases of occluded tubes in which no history of gonorrhoeal or other pelvic infection is obtainable.

Salpingitis is by far the most important factor in impairing the functional value of the tube as an oviduct. Curtis (Surgery, Gynecology and Obstetrics, December, 1921) gives the results of the bacteriological and pathological investigation of fallopian tubes removed at operation from 300 patients. Not only were smears made from the fluid in these tubes, but the tubes themselves were ground up and cultured. He concluded that the gonococcus was responsible for approximately 80 per cent of these cases, other pus-producing bacteria, notably various types of streptococci, caused 15 per cent, while evidence of tuberculosis was found in 5 per cent.

In this discussion we are especially interested in the end results of infections, for it is these which cause sterility. It was formerly believed that when once a patient had developed gonorrhoeal salpingitis she was doomed to permanent closure of both tubes with resulting sterility. More careful study of these cases has proven that gonorrhoeal salpingitis, more than any other type of salpingitis, shows a tendency to spontaneous recovery, and that many women with bilateral gonorrhoeal salpingitis have recovered and subsequently borne children. A single attack of mild gonorrhoeal salpingitis frequently leaves no bad after effects. Those tubes, however, which are subjected to a severe attack of salpingitis, or frequent reinfection from a focus, such as an endocervicitis, are apt to be permanently damaged. In such cases the fimbriated extremity very frequently becomes occluded either by retraction or adhesion of the fimbriae, or by a plastering of the end of the tube to the ovary, or some adjacent structure.

*Read to the Section on Obstetrics and Gynecology at the Fifty-second Annual Session of the California Medical Association.

This may be followed by distention of the tube with formation of pyosalpinx, hydrosalpinx, or hematosalpinx. The perisalpingitis in gonorrhoeal cases is not usually so crippling in its results, nor so permanent as in other infections. Some authorities state that at operation one can differentiate between gonorrhoeal and other forms of salpingitis by the density of the adhesions, and the difficulty encountered in their separation. The gonorrhoeal cases usually separate much more readily than the others, but it must be remembered that there are notable exceptions to this rule.

Sometimes the tube remains open at the abdominal extremity, but closed in some other part of its course. This is due to extensive destruction of epithelium with adhesion between the folds of the mucosa. Serious damage to the lining of the tube is more common after gonorrhoeal infection than that caused by the streptococcus.

In post-puerperal and post-abortion infections perisalpingitis and persistence of infection are the most notable features. There is less damage done to the endosalpinx, but the adhesions to surrounding structures are more dense and show less tendency to be absorbed. Streptococci may be obtained from tubes months or even years after the acute process has subsided, while gonococci usually become inactive two or three weeks after the disappearance of fever and leucocytosis (Curtis).

In tuberculosis of the tubes, adhesions are usually very dense, the tubes are much thickened due to hyperplasia of the mucosa, but occlusion of the fimbriae is not so frequent as in gonorrhoeal tubes of the same severity. Needless to say sterility is the rule in such cases.

Tumors of the fallopian tubes are too rare to require more than passing mention.

Pathological condition of the ovary causing sterility.

A second condition necessary to impregnation is an ovary producing and discharging healthy ova. S. R. Meaker (Boston Medical and Surgical Journal, October, 1922) groups the disorders interfering with this condition under four headings:

1. Constitutional.
2. Toxic.
3. Endocrine.
4. Mechanical.

Constitutional causes are such as malnutrition, anaemia, cachexia and those conditions arising from faulty diet and hygiene. Reynolds (American Journal of Obstetrics and Gynecology, October, 1921) has shown by experimental work that a decrease in the fat soluble vitamins, of the protein or of the calcium contained in an otherwise excellent diet produces a definite decrease in the fertility of individual rats. It is fair to conclude that the same is true to some degree in women.

Of toxic conditions the most important are syphilis, mumps, chronic poisoning from alcohol, morphin, arsenic, phosphorus and lead.

Endocrine sterility includes cases of infantilism, where the ovaries have never developed, as well as those in which sexual activity wanes early in life.

The mechanical disorders which cripple the ovary are largely the result of inflammation. The

whole subject of oophoritis is in a very unsettled state, but that such a condition does exist, and that it is frequently followed by adhesions of the ovary to adjacent structures, by thickening of the tunica albuginea, and by increase of the interstitial connective tissue is generally admitted. These conditions interfere with the normal maturation of the Graafian follicle and with the discharge of the ovum and consequently are causes of sterility.

Conception seldom takes place in the presence of double ovarian tumors or dermoid cysts.

Diagnosis.

The important point in diagnosis in a case of sterility in which the tubes are suspected is not so much what pathological condition, if any, is present, but whether the tubes are patent or occluded.

In the past the great barrier to the study of the tubes has been the fact that it was necessary to perform a laparotomy to determine whether the tubes were patent or not. Most women hesitate to undergo such an operation when they can not be assured that there is a condition in the tubes requiring operation, and further that there is not a fifty-fifty chance of a good result even if the tubes are found to be closed.

This barrier has largely been removed by the introduction by Rubin of the gas-inflation test.

Briefly the test consists in passing carbon dioxide gas through the uterus and tubes, followed by its demonstration in the peritoneal cavity by the use of the X-rays. The apparatus necessary for Rubin's test is: (1) a tank of carbon dioxide gas with a pressure gauge to control the rate of flow, (2) a glass chamber containing a volumeter to measure the amount of gas, (3) a mercury manometer to register the pressure of gas, (4) an inter-uterine canula of the Keyes Ultzmann type fitted with a rubber stopper to block the cervical canal, (5) rubber tubing to connect the various pieces of apparatus.

Rubin has found that the most satisfactory rate of flow of the gas is that which will register 100 mm. mercury in fifteen seconds when the outlet to the uterine canula is blocked. The amount of gas used to determine the patency of the tubes is about 160 cc., which is indicated by four pulsations of the volumeter.

The technique of the test is as follows: The patient is placed in the lithotomy or Sims position, an appropriate speculum introduced, the vagina is cleansed and any mucus present in the lower part of the cervical canal removed, cervix and endocervix painted with iodine. The direction of the uterine canal is determined accurately with a uterine sound. The apparatus having been prepared with gas flow properly regulated, the sterile intra-uterine canula is introduced well beyond the internal os, the rubber stopper completely closing the cervical canal. It is seldom necessary to grasp the anterior lip of the cervix with a tenaculum as recommended by some authors. The gas is turned on and the manometer carefully watched.

In patent cases the pressure will rise to a point somewhere between 50 and 150 mm., then drop sharply to 40 or 50 mm., at which point it fluctuates as long as the gas is flowing. If the pressure

goes above 150 mm. and then falls rapidly, it is interpreted as indicating that there was some obstruction in the canal caused by a kink or a plug of mucus, and that the kink has been straightened out or the plug dislodged. A repetition of the test in such cases usually shows a frankly patent tube.

If the pressure rises above 150 mm. and then falls very slowly it indicates a stenosis of the tubes, which permits the gas to pass very slowly. It may indicate a closure of one tube, and a stenosis of the other. Some investigators believe that they can locate such a stenosis by auscultation over the lower abdominal quadrants, the whistling sound of the gas going through a narrow opening indicating the side of the stenosed tube.

If the pressure rises to 200 mm. on repeated tests, a diagnosis of non-patency can be made.

After the pneumoperitoneum is produced patients usually complain of pains in the abdomen, like gas pains. When they are allowed to sit up, the gas rises to the space between the liver and the diaphragm and pain in the right shoulder is almost invariably noted. At this point the patient may be fluoroscoped and the presence of a pneumoperitoneum made certain by the appearance of a halo over the dome of the liver. Many observers feel that this is unnecessary and rely on the shoulder pain as conclusive evidence of pneumoperitoneum.

I believe that at least for those inexperienced in this work it is advisable to check up by the use of the fluoroscope.

At first sight it would seem that there would be danger of forcing infectious material out through the tubes into the pelvic peritoneal cavity. Experience in hundreds of cases has shown that the reaction in the pelvic peritoneum is insignificant, or entirely absent. I have not found one case reported where there has been a serious reaction. The pain caused by the presence of carbon dioxide in the peritoneal cavity is of very short duration, seldom lasting more than thirty minutes.

There are, of course, certain contraindications to the use of this test, which must be carefully adhered to. Acute infections of the vagina, or pelvic organs are absolute contraindications. In chronic infections associated with pain the examination had better be deferred until the pain has cleared up. The test should not be performed just before or after a menstrual period. Patients with myocardial disease are not good subjects for inflation.

This test has been used in such a large number of cases, by some of the most competent men in this country, that we must realize that it is an accepted addition to our diagnostic and perhaps therapeutic armamentarium, and that no patient should be submitted to an abdominal operation for the cure of sterility until the non-patency of the tubes has been demonstrated by tubal inflation.

Modifications and simplifications of this test have been suggested. One worthy of note is that of Furniss (Surgery, Gynecology and Obstetrics, November, 1921). He used a tight-fitting 30 cc. Luer syringe with a T connection. The right angle arm of the T goes to a manometer, while

the direct tube connects the syringe to the intra-uterine canula. The patient is put in the Trendelenburg position, with the hips elevated, a bivalve speculum introduced into the vagina, the canula introduced, and the vagina flooded with boracic acid solution. Furniss states that 15 cc. is the maximum capacity of the uterine canal and tubes. Therefore 30 cc. of carbon dioxide gas is injected, and if no gas bubbles back from the cervix, then the gas must have escaped through the tubes. I have not tried this simple technique, but cannot see why it should not be satisfactory.

Diagnosis of conditions of ovary.

With the exception of tumors and cysts of the ovary the diagnosis of the ovarian condition present can best be made by careful consideration of the history.

For example, with all other causes of sterility eliminated as carefully as possible, and with a previous history of pelvic inflammation followed by irregular, scanty and painful menstruation, added to the finding of a small, fixed, painful ovary, one would be justified in concluding that the ovary was the seat of the trouble. Fine differential diagnoses in such cases are not to be considered. One must keep in mind the possibility of constitutional, toxic and endocrine causes, as mentioned above.

Treatment.

The relief of sterility by operation on the tubes and ovaries has never been a very optimistic chapter in the history of surgery. Some surgeons state that they have never seen pregnancy follow plastic surgery on the tubes, while others claim a fair share of success. On the whole, the tendency at the present time is towards optimism and this is based largely on better selection of cases due to the possibility of more accurate diagnosis.

The therapeutic value of gas inflation seems to be forcing itself on the minds of all who are using this method. Many of the recent articles on gas inflation state that a certain percentage of their cases become pregnant very soon after they have been tested, suggesting that a very slight obstruction in the tubes has been removed by the passage of the gas.

The strong argument against salpingostomy has always been that there would be sufficient reaction following operation to close the new ostium. It is only logical to believe that repeated inflation at short intervals following this operation will tend to keep the tubes open.

The standard operations on obstructed tubes consist of some method of dilation in the mild cases, and salpingostomy or salpingectomy with implantation of part of the ovaries in the uterine cornua in the severe cases.

With the abdomen open a slight stenosis or kinking of the tube may be relieved by the passage of probes, or pneumatic dilation. In sterile patients who are being subjected to abdominal operation, Curtis (A. M. A. Journal, February, 1923) recommends the distention of the tubes by the use of air forced in by a Luer syringe placed at the fimbriated extremity of the tube. He states that "this procedure reveals the presence of otherwise undemonstrable obstruction within the tube, minor

strictures when discovered may be overcome by forcible syringe pressure, the anatomic limitations of grossly palpable obstruction, possibly amenable to plastic surgery, may be more definitely determined, and at the completion of plastic operations on the tube, it is possible to test the patency of the reconstructed lumen."

Blair Bell (Oxford Surgery, Vol. 5, page 242) states that salpingostomy is seldom indicated for a closure of fimbriated extremity due to primary salpingitis, as the uterine end of the tube is frequently blocked in this condition. In cases where the infection has spread to the covering of the tube, from such conditions as appendicitis, the lining membrane of the tube is usually intact and salpingostomy is indicated.

In extreme cases, where both tubes are damaged beyond repair, but one or both ovaries are in fair condition, one may try extirpating the tubes and planting a piece of ovary in each uterine cornu. A few successful cases of this kind have been reported (Graver's Gynecology, page 265), but the chance is a long one.

Conditions of the ovary leading to sterility do not offer an attractive field for surgery. Perhaps organotherapy offers a more hopeful outlook.

In conclusion, I would urge a more careful study of women complaining of sterility, emphasizing especially the value of the inflation of the tubes as a means of diagnosis.

In cases of non-patency where there is no evidence of serious damage to the lining of the tubes, and where the ovary seems to be normal, I would advise salpingostomy followed by gas inflation at regular intervals to preserve the patency of the new ostium.

We have to admit that the results of this work in the past have not been very brilliant, but I believe that we may fairly look forward to good results in the future, provided that only those cases are submitted to operation in which common sense tells us that there is a reasonable expectation of a cure.

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"Throw Away Your Glasses"—In the September number of Hearst's International appears a contribution entitled "Throw Away Your Glasses," by one W. H. Bates, M. D. The article is an unfortunate hoax for thousands, even tens of thousands, of persons who will be cruelly deluded by its irrational bunkum. It presents a half-baked theory, based on the crudest of experimental work, elaborated in a pseudo-scientific manner and presumably broadcast by the magazine because of its sensational title. Half or less than half truths are announced as facts without any investigation of underlying anatomic and physiologic conditions, and with no careful experimental study. Certainly the case reports are too questionable to stand thorough analysis. The entire matter illustrates again the danger of unauthorized instruction of the public in medical matters. One article of this character may undo the good work of years by committees and councils for the conservation of eyesight; it will lead into false paths many of the afflicted who were progressing slowly but surely on the road to recovery. An editor's note indicates that the article is sponsored by Mr. Norman Hapgood himself. Where did Mr. Hapgood acquire his knowledge of the science of ophthalmology?—*Jour. A. M. A.*, Sept. 1, 1923.

TUMORS AND DISPLACEMENTS IN RELATION TO STERILITY*

By FRANK W. LYNCH, M. D.

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This paper is limited to the discussion of fibroids and retroversions and retroflexions as causes of sterility.

FIBROIDS AND STERILITY

There is no doubt but that the fibroid statistics of the literature show a higher proportion of sterile marriages than of married women in general. The figures for married women, as a class, vary considerably. They depend for the most part upon the frequency of the common causes of sterility such as preventives for conception, tubal and ovarian inflammation, anatomical defects, etc., some of which may operate equally well in women who have had or subsequently will have fibroids. Sterility in women who have been under treatment for some medical or gynecological condition varies between 7 and 21 per cent. Goetze found that 7 per cent of 730 gynecological cases were sterile, the series including some fibroids. Hofmeier found 8.1 per cent of sterility in 5462 clinic cases in contrast with 17 per cent for 2795 private cases. Sterility in the married women of the series of Sims, Simpson, Wells and Duncan ranged from 8 per cent to 15 per cent. Young and Williams found sterility in 10.5 per cent of 238 medical cases who had no pelvic complaints. Grunewaldt recorded sterility in 21 per cent of 900 gynecologic cases and felt that developmental arrests were responsible for the condition in all cases. On the contrary, sterility is said to exist in approximately 30 per cent of married women with fibroids. Olshausen found this percentage in the 1730 married women constituting the series reported by West, Roehrig, Beigel, Schumacher, Scanzoni, Michels, Winckel, Schorler and Hofmeier. When reviewing this subject some years ago, I found certain errors in some of the tables forming the basis of Olshausen's calculations, yet they did not affect the percentage in an appreciable manner. Adding to this series, the cases of Schroeder, Young and Williams, Haultain, Goetze and Kelly and Cullen, we found that 31.5 per cent of the 3617 cases were sterile. My individual series shows about the same proportion. Only 169 of the 215 fibroid cases in the married women of my series had had children, a sterility of 31.8 per cent.

The above shows that there is twice as much sterility in fibroids in married women as is found in married women in general who have been under medical care. Our first part of the problem is to find whether sterility may result from the tumor itself. There is some evidence in favor of the positive view, since the percentage of sterility has been shown to vary according to the size and location of the tumor. It is usually believed that sterility is most common in the cases with submucous tumors, but this idea is not confirmed by the literature. It is of interest in this connection

*Read to the Section on Obstetrics and Gynecology at the Fifty-second Annual Session of the California Medical Association.

to recall that pregnancy may occur in carcinomatous uteri. We often see it in women who are still under treatment for marked leucorrhea and cervical irritation. The advocates of the theory do not consider that submucous tumors are rarely seen in non-parous women. They originate presumably most often following the puerperium, being displaced from interstitial positions during the involution of the uterus. Goetze found that 91 per cent of his submucous fibroid cases had borne children.

On the contrary, the literature indicates that there is a higher proportion of sterility in the larger than with the smaller tumors. The highest percentage of sterility in the most interesting series of Schorler, Young and Williams, and Goetze, is found in the interstitial or subserous groupings, probably because the largest tumors were of these types. Goetze arranged his cases in four groups according to the size and number of the tumors and the severity of the symptoms. The sterility percentage ranged from 13.6 per cent for the fibroids the size of an apple, to 50 per cent for growths the size of a man's head.

Personally, I cannot accept these interesting findings as absolute proof that the tumor usually accounts for the sterility. There is always the chance that the sterility accounts for the tumor. We see too many pregnancies with tumors of large size to believe that the changes induced by the growth are likely to cause sterility. In this connection, we must remember that fibroids are most common in the latter half of menstrual life, while pregnancy usually first occurs at a much earlier age. Long before the fibroid appears, the woman may have been sterile. The great mass of fibroids in my individual series were only a few centimeters in diameter. It does not seem reasonable to suppose that these tumors, almost invariably subserous or interstitial, were responsible for the sterility. Far more likely it is that a common factor accounted for both fibroids and sterility.

It is well known that fibroids are common in virgin women of middle life, from which it is argued that they result because the uterus has been denied its opportunity to hypertrophy in its physiological manner, i. e. pregnancy. This view was first expressed by Bayle in his classical paper of 1807. This view is supported by nearly all men who do the surgery of the religious orders composed of celibate women in whom fibroids are common findings. We are likely to forget, however, that Bayle at the same time emphasized the fact that fibroids were common in married women who were relatively sterile. We must distinguish between women who are virgins and those who are sterile. I feel that the latter part of Bayle's statement has been misinterpreted and instead of holding that it supported the view that fibroids developed because the woman was sterile, incline to the belief that it supports the theory that fibroids develop in women who are relatively sterile because of congenital causes.

UTERINE RETRODISPLACEMENTS AND STERILITY

Since the time of Sims, the belief has existed

that pregnancy is not apt to occur in a retrodisplaced womb, yet every obstetrician of experience knows that women with retroposed uteri may prove very fertile. Personally, I have had a large number who have had two or three children. One case has had five pregnancies in the last six years. Her uterus was known to have been retroposed before marriage, and has been back at every examination made during her non-pregnant condition.

Yet these cases, like the fertile women who have had fibroids, may well be exceptions to the rule. There is considerable evidence for the belief that women with retroverted uteri do not as readily become pregnant as women with the more normal position.

During the past seven years, we have been conducting a study of the meaning of uterine retroversio-flexions. The series consists of 459 cases, half of which have been followed for more than one and a half years and fifty-three for from five and a half to seven and a half years. One hundred and twenty-eight, or 28 per cent, of these women with displacements have had subsequent pregnancies. Unfortunately we have no series of normal controls with which to make comparisons as to fertility. Our controls were followed for comparatively short periods of time. In another study, however, we showed that pregnancies were observed in 15 per cent of 430 cases who did not have displacements, in 10 per cent of displacements which had been corrected by replacement of the uterus and pessary support, and in only 5 per cent of the series with more or less persistent retrodisplacements.

Our present study suggests that congenital anomalies may account for both the sterility and displacement in a considerable portion of cases, although the disturbed uterine circulation may account for the sterility in many of the acquired retropositions.

Our investigations force the conclusion that a large per cent of retrodisplacements that give no symptoms are of congenital origin and that sterility is more common in the congenital than in acquired retropositions. This view was evolved while trying to explain the varying percentages of fertility in our displacement cases. The following tables are of interest in this connection.

There were 459 retroposition cases divided in various groupings, chiefly as (a) retrodisplacements with, or (b) without symptoms, subdivided according to the presence or absence of perineal and cervical lacerations. There were 128 of the 459 retroposition cases who had one or more pregnancies subsequent to our finding a retrodisplaced uterus. Sixty-one per cent of the women that became pregnant were in the group (A) of 236 displacements that had symptoms, while only 39 per cent of the women that became pregnant were in the group (B) of 223 retrodisplacements that had never complained of pelvic symptoms. There were 310 cases of simple retroposition without evidence of cervical or perineal lacerations. One hundred and thirty of these had symptoms and 180 did not have them. There were 79 women of the 310 simple retropositions that had pregnancies, 39 of these in the 130 simple retropositions that gave symptoms, and only 40 in the much larger group

of 180 simple retractions that did not give symptoms.

Of the 128 women who became pregnant in the total series of 459 cases, pregnancy occurred in 80 cases while the uterus was known to be in the forward position and in 27 cases while it was known to be retraced. The uterine position was not known at the time of pregnancy in the other 21 cases, although it had usually been posterior.

In conclusion, we state our belief that sterility occasionally is caused either by fibroids or posterior displacements, but the great cause is probably congenital or of developmental origin.

WHAT RELATION EXISTS BETWEEN THE ENDOCRINE GLANDS AND STERILITY?*

By F. M. POTTENGER, M. D., Monrovia, Calif.

ENDOCRINE FACTORS IN STERILITY

The importance of disturbance in endocrine equilibrium as a cause of sterility is just beginning to dawn upon the medical profession. With a better appreciation of functional pathology we are learning that there are many conditions met in clinical medicine which do not have primarily an anatomic basis. The recognition of the fact that disturbance in function is a clinical entity worthy of the same attention and care as anatomical change is ushering in a new era in medicine in which the individual becomes greater than any part and in which the unity of the human body is emphasized.

With this new conception the psychical side of the individual also takes its place in the causation of symptoms along with the physical, and alterations in function in a given tissue or organ are recognized as being resultants of all the forces acting at the time upon that organ.

Functional pathology is a real important part of clinical medicine. No one can be conversant with visceral neurology, endocrinology and biochemistry without recognizing that any important function of the body may be disturbed without having a primary anatomical pathology back of it; and furthermore, no one can be conversant with the psychical side of man without knowing that those great vegetative systems can be disturbed by pathologic psychic states as well as by stimuli arising in the physical body. Unless one recognizes these facts he will fail to appreciate and properly classify a certain large group of clinical syndromes which are met in the every-day practice of medicine.

The subject of sterility in women illustrates these principles well. It cannot be adequately discussed from the anatomical basis alone. While inflammatory disease of the ovaries, tubes and uterus and mechanical interference with conception often exist, there is still a group of sterile women, the percentage of which is uncertain, as yet, who do not respond to any of the measures

which are applied for the relief of their sterility, because the cause is functional and not anatomic.

In order to understand this it is necessary to have a comprehensive understanding of the fundamental physiologic factors governing the development of sex glands and their function. While the production of the ovum and the reception and retention of it in the uterus when fecundated are essential to successful impregnation, the factors which control impregnation are many and are connected with various portions of the vegetative systems.

Whether or not a woman shall be able to bear children is not determined alone by the possession of ovaries, tubes and a uterus, but upon such organs being able to function normally. This presupposes a normal development and the maintenance of normal sexual function.

The development of the female sexual organs, as well as the female secondary sex characteristics, depends upon many of the endocrine organs. There cannot be normal sexual development and normal sex function without the secretions from the thyroid and pituitary and other secretions, while less important, also effect changes in the sex organs. Genital function is stimulated by ovarian, thyroid, pituitary and suprarenal secretions. It seems to be diminished by the thymus and at times by thyroid.

THE OVARY IN STERILITY

The ovary is a very constant factor in a certain group of cases of sterility. Ovulation may not take place; but, as is proven in cases of pregnancy during lactation, ovulation often takes place when menstruation is absent. Congenital ovarian insufficiency as a cause of amenorrhoea and sterility is believed to be rare. Hypoplasia and hypoactivity of this kind is caused as a rule by hypoactivity of the thyroid or the pituitary. The adrenals are also at fault at times.

These relationships which the various secretions bear to the sex function offer a basis for treatment of quite a large group of women suffering from sterility. Ovarian extracts should be employed in these cases of diminished sex function, but alone will rarely produce satisfactory results. If the relationship of the thyroid and the pituitary to the condition under observation is carefully diagnosed and the indicated secretion added, then success will very often follow the treatment.

INFLUENCE OF THE THYROID

A very marked reduction of thyroid secretion in early life produces cretinism, a condition which is accompanied by a failure of development of the body as a whole, including the sex organs. If the thyroid secretion becomes diminished later in life, the ovary and uterus may become infantile through atrophy; amenorrhoea may result; or, if the age of puberty has not been attained, the function may not be established at all. If the deficiency in thyroid comes later in life, after the sex function has been established for years, instead of amenorrhoea, menorrhagia sometimes occurs, the menstrual periods being prolonged and the intervening time being shortened. Therefore it is evident that a very marked influence is exerted upon the sex

*Read to the Section on Obstetrics and Gynecology at the Fifty-second Annual Session of the California Medical Association.

organs and sex function by the thyroid secretion; a decrease in this secretion in early years stunting the growth and development of the sex organs and in later life "depressing the function of ovulation and menstruation. The effect of this influence leads to sterility in quite a proportion of cases. In marked myxoedema, sterility is the rule, the cause being ascribed partly to the infiltration of the uterine mucosa and muculature. The types of sterility due to lessened thyroid secretion coming on after the sex organs have been developed may be relieved by the administration of thyroid substance.

THE PITUITARY IN STERILITY

The influence of the pituitary on the sex organs is often greater than that of the thyroid. Hypopituitarism occurring before puberty may produce any one of three distinct conditions: infantilism, both general and sexual without adiposity; stunted growth with genital hypoplasia and adiposity; or gigantism with adiposity and genital hypoplasia. All of these conditions lead to sterility. Hypopituitarism as found in acromegaly also produces sterility, but here the condition seems to be due to an entirely different cause. Acromegalic women assume the masculine type and this masculinity is the cause of their sterility instead of the genital hypoplasia as found in hypopituitary states.

The question of these early hypopituitary states is not one of sterility, but one of overcoming the entire group of bodily changes produced by the deficiency. If one is alert to the changes caused by deficiency in pituitary secretion and will recognize it before serious harm has been done, appropriate treatment will often be followed by relief of both developmental and functional disturbances.

There is an extremely interesting inter-relationship between ovary, thyroid and the pituitary, which must always be borne in mind in attacking those functional disturbances on the part of the female sex organs which are due to causes other than inflammatory and mechanical. So far, in the administration of organotherapeutic preparations that from the thyroid is the one that gives best results. In conditions where the ovary and pituitary are at fault, the thyroid is usually a factor, and with the active thyroid preparations that we have we are usually able to do some good by their administration.

STERILITY FOLLOWING TOXEMIA

It is not uncommon to see cases of sterility and early menopause follow toxemia. In some of these cases the cause may be due to direct injury to the ovary, but in many others it is a secondary matter, caused by injury to the thyroid and the pituitary. Sterility sometimes follows acute infections such as mumps and typhoid. In one or two instances I have seen early menopause in tuberculosis. A cessation of menstruation for a period of months is not at all uncommon in tuberculosis, and we often observe temporary hypopituitarism and hypothyroidism of various grades, develop following the toxic states which are met in the course of chronic tuberculosis. Such conditions may suggest themselves, but equilibrium can be hastened by appropriate therapy.

THE DIAGNOSIS AND TREATMENT OF STERILITY*

By FREDERIC M. LOOMIS, M. D., Oakland

AN ANALYSIS OF 150 CONSECUTIVE CASES

In making this analysis I set out to determine what types of sterility patients might be classified as reasonably good "prospects" at the first interview, when the history is taken and general physical and pelvic examinations are made, and the rather unexpected and interesting finding is that such a hope is futile.

The figures that follow are based on a tabulation of 150 consecutive sterility patients, covering age, general health, menstrual abnormalities, leucorrhea, marital years, parity, voluntary or involuntary abortions, general health of the husband, fat, skin condition, tonsils, teeth, cervix, size and position of fundus, appendages, vaginal reaction before and after coitus, number and activity of spermatazoa present in the vagina and cervix after coitus, the size of the seminal pool, and the sexual reaction. The treatment is classified under six other heads.

Extended consideration of the several thousand facts thus available has shown the absolute necessity of four different procedures with each patient, none of which may ordinarily be omitted, to reach a fair diagnosis. These are (1) the history, taken with unusual care; (2) the general physical and pelvic examination, including the vaginal and cervical reactions to litmus; (3) examination of the secretions after coitus without the use of a condom, and (4) determination of the patency of the tubes by inflation. We have all seen the patient who comes to us after years of hope deferred, saying, "My doctor gave me a careful pelvic examination and said I was perfectly all right, but month after month I am disappointed." That a careful pelvic examination is not enough is shown by patients No. 116, 30 and 14. Each of these had a pelvis which would pass as "perfectly all right" on ordinary examination, yet each was hopeless. No. 116, with perfectly patent tubes, had a husband with complete aspermia; No. 30, with an entirely competent husband, had complete occlusion of the tubes, and No. 14 not only had complete occlusion but her husband had not a spermatozoon to his name! Perhaps her household was the more content, after all, as neither partner could justly point a finger at the other!

Results of history and general examination.

The unsuccessfully treated patients ranged in age from 20 to 39, with an average of 29.5; the successful ones ranged from 21 to 35, with an average of 28.2, giving only a slight advantage to youth. The average age of mothers of first babies in California is 23.9. The average years of married life of the unsuccessful was 4.8, and of the successful only 3 years. The obvious though not necessarily correct conclusion is that it does not pay to wait too long.

Mindful of the work of Evans of the University of California, Donald Macomber of Boston, Blair-

*Read to the Section on Obstetrics and Gynecology at the Fifty-second Annual Session of the California Medical Association.

Bell of England, and others, I have tried to connect sterility with dietary deficiencies in these patients, especially in the more recent ones. I have looked especially for failure to take fresh vegetables, lettuce, oranges and milk, but in not a single instance have I been able to suspect that vitamin deficiency or lowered calcium intake was a serious factor in the individual's problem. These patients are practically all of the better class and fresh food is so easily obtained in California that this series may not represent a typical group.

Of 150 sterility patients, 43 per cent had abnormal menstrual periods, usually either irregular or small, or both. This percentage seemed much too high until I counted alphabetically for comparison 150 primiparous obstetric patients. Judged by the same standards 33 per cent of these patients showed similar trouble, so the difference is not great. Similarly, 16 per cent had more than moderate leucorrhea, and on examining the histories of primiparous obstetric patients exactly the same per cent was obtained.

Careful and tactful questions will usually elicit a reasonably accurate statement from the patient as to sexual reaction. This apparently has no direct bearing upon this problem however, as 55 per cent of our successful patients had poor reaction or none at all, while 72 per cent of the failures had normal reaction. Nevertheless, the question seems useful as it frequently leads to other information of more direct value such as pain, reluctance, frequency, etc., regarding which the quiet and considerate advice of the physician may mean much to the patient, regardless of the solution of the main problem. Incidentally, and to my surprise, infrequent exposure to pregnancy has been a definite factor in a good many of these patients, and this should always be corrected while the patient is under treatment.

As to cervical pathology, 14 per cent had excessive, tenacious cervical mucus, 17 per cent had rather marked erosion, and 57 per cent had marked cervical stenosis, so-called because of a very tight external os long, slender cervix and marked ante-flexion, giving the impression of a stenosis more marked than we are accustomed to feel in the normal patient.

Only one-half of these patients had a fundus of normal size, and half were described as small or very small. Seventy-five per cent had the fundus in normal anterior position, 13 per cent were in the so-called Graves congenital ante-flexion with posterior rotation to about a mid-position, and the same percentage were frankly posterior, i.e. 26 per cent were in abnormal position. The significance of these positions will be considered in a moment.

Pathology of the adnexa was diagnosed in fifteen of these 150 patients, all being chronic, and yet none having definite history of gonorrhoea. Five of these were successfully inflated, but not one of them has become pregnant, except the two who were operated for the double purpose of relieving pain and of increasing their chances for pregnancy. An ovarian cyst, with its attached tube, was removed from one of these, and one tube and ovary showing marked inflammatory change was

taken from the other. Both had tried unsuccessfully for several years to become pregnant but promptly conceived as soon as they recovered from the operations. This is at least suggestive, though we know that patients with old processes do sometimes become pregnant, often to our sorrow and theirs.

Examination after coitus.

It is well known that the normal vaginal reaction is moderately acid, becoming alkaline at or around the cervix. The reaction to litmus is much sharper in some patients and these I describe in my histories as "instantly acid," the acidity sometimes including the external os itself. I have tried to influence this by destroying the vaginal flora then present by iodine, mercurochrome, picric acid, etc., with sometimes the implantation later of some of the yeast preparations. This has been only temporarily or indifferently successful and it often seems necessary to prescribe a douche of sodium bicarbonate before coitus to overcome the acidity which is fatal to the spermatozoa. The statement that the alkaline douche is unnecessary because of the alkalinity of the semen is plainly refuted by the fact that 60 per cent of the patients whose reaction was tested after coitus, no douche being used, were still acid; and also by the fact that in several instances only dead spermatozoa were seen until coitus was preceded by an alkaline douche, after which normal motility was found.

The behavior of the spermatozoa in relation to the cervical mucus is unusually important and I think it is frequently overlooked. The difficulty of securing uncontaminated specimens from the endocervix is overcome by the use of a special alligator forceps, which is much superior to suction or any other method I have seen. This instrument was suggested to be by Edward Reynolds of Boston, who has done so much to advance our knowledge and interest in this subject. Frequently many active and well-formed spermatozoa are found in the vaginal pool, while only a few have penetrated the tenacious mucus of the endocervix and these are hopelessly entangled. Though other conditions be normal, it is asking too much even of the willing spermatozoa to expect them to travel upward through a narrow canal filled with "tanglefoot" and I am convinced that this is one of the real bars to fertility. Examination of the secretions of the endocervix before and after coitus is an essential part of our work, and I am beginning to believe that when there is tenacious mucus, with an excessive number of leucocytes in its secretion, and yet there is no apparent pathology such as erosion or endocervicitis, the condition is probably one of the diverse signs of endocrine disturbance, and we are now attempting its treatment along that line. The condition is frequently associated with a long, narrow cervix, and in these patients we feel we have an unusually definite objective.

We consider this indirect examination of the husband much more valuable than the examination of the condom specimen; and we rarely have any difficulty in securing the examination when it is explained to the patient that it is really not a test of either of them, but rather an investigation into

the reaction of the two individuals upon each other. The reluctance of the husband to be tested or even doubted is thus overcome. This examination is sometimes checked by condom examination in doubtful cases, especially of non-motility. Transportation of the condom specimen in a vacuum bottle would be more satisfactory if patients could be persuaded that neither frozen nor parboiled spermatozoa are at their best.

Eighty-nine of these patients were examined within one hour after coitus, some of them several times. Of these, 63 per cent showed normal spermatozoa, 11 per cent were fair, 15 per cent were poor, and 11 per cent showed a complete aspermia, 37 per cent therefore being below par. It is significant, though perhaps partly accidental, that only one of these husbands listed below par has so far become a father.

Tubal inflation.

Ninety-two pelvic inflations were done upon fifty-nine of these patients. Sixty per cent were successful the first time, 29 per cent required from two to five trials, and 11 per cent were entirely negative. These were discharged as hopeless. We use the Rubin method, with carbon dioxide gas, as developed by Reuben Peterson and John W. Sherrick, of Ann Arbor, the latter now being my associate, much of the work incorporated in these notes being his.

Not the least useful feature of testing the patency of the tubes is the possibility of determining at once that some patients are practically hopeless because of closed tubes, thereby saving the time and cost of futile non-operative treatment. One test is not sufficient, as shown by the number in this series who were successful after an initial failure. While it is theoretically possible that the pressure of the gas may actually open tubes which are tightly closed, it seems more probable that uterine muscle spasm, causing a temporary occlusion of the uterine ends of the tubes, is a frequent cause of the apparent failure of the gas to go through. We think it possible that the gas goes through on the second attempt because of the lessened apprehension of the patient. The method in detail is not given here since it has so frequently been described in recent papers, though I may urge that if the gas be liberated very slowly, there seems to be less tendency to spasm and less pain. We have never had the slightest evidence that infection might arise from the entrance of the canula or the gas, though in one instance acute symptoms on the right side greatly concerned us for a day or two until they were found to arise from an appendix, a coincidence which might have been embarrassing if not demonstrated. Patients leave the office in half an hour or so after the test and complain very little of pain later. I consider this test the most valuable addition to our resources in many years, but largely as a means of diagnosis rather than of treatment. Only one of the successful patients became pregnant as an apparent result of inflation, everything having failed for nearly a year and pregnancy following immediately after the first inflation. In this instance the pressure rose to 200 many times before the gas

finally went through and we have thought that perhaps the tubes were thus actually opened, though coincidence must be admitted.

General results.

Of the 150 consecutive sterility patients, eighteen did not return after the first interview and general physical examination. Thirty-four were incompletely examined or treated, some moving away, some having incidental illness, and some failing to complete the treatment for reasons unknown to us. (Two of these have just reported missing a period and are probably pregnant, but are not so included because still uncertain.)

Of the remaining ninety-eight, seventeen were discharged as hopeless, or nearly so; and it is interesting to note that eleven of these were so considered because of failure on the part of the husband, while six were dismissed because of closed tubes. Several of these were advised to adopt babies and did so at once, to their great happiness.

Thirty-nine of the remaining eighty-one received fairly complete treatment and must be considered failures. The other forty-two have become pregnant, apparently as the result of treatment. The percentage of success, excluding those who were not treated at all or only partially treated, but including those whom examination showed to be hopeless, is therefore 43; if the hopeless ones are excluded, as they should be, the percentage of demonstrated success is 52. The time interval from beginning treatment to the first missed period varied from one to thirteen months, with an average of 4.7 months.

Twenty-four of the successful patients apparently required and received dilatation of the cervix. This was done in nearly all cases by the negative pole of the galvanic current, this method having replaced, in our office, surgical dilatation. It causes very little pain as a rule, saves the expense and time of hospital and anesthetic, and so far has been perfectly harmless. It is the only use I make of electricity, except for the thin electric cautery in the treatment of cervical erosion. Incidentally, it has usually relieved severe spasmodic dysmenorrhea when present with stenosis, and patients have often expressed themselves as repaid by this, even if they have not been successful in their major quest. I do not consider curettage a part of the routine treatment of sterility.

Ten of the successful patients received endocrine treatment, chiefly thyroid, and but little else except measures similarly intended to bring their general condition closer to par, such as removal of septic tonsils and teeth, appropriate tonics, etc. Reynolds and Macomber of Boston have frequently asserted that fertility is a relative thing and my experience strikingly confirms this statement.

Five times as many of the failures had excessive tenacious cervical mucus as did the successes, and about 60 per cent more had very small undeveloped uteri, suggesting that when these two conditions are found together, the outlook is less bright. Conversely, the patient with normal mucus, normal fundus and patent tubes, regardless of the tightness of the cervix, leucorrheal discharge, erosion and vaginal acidity, all of which are amenable to

treatment, may be considered a little better than a 50 per cent risk, provided her husband is a competent partner.

CONCLUSIONS

1. Sterility patients do not differ greatly from the general average of primiparous obstetric patients in menstrual abnormalities or leucorrheal discharge, but are about five years older than the average primipara.

2. Knowledge of sexual reaction is of no direct value in the treatment of sterility, but indirectly is frequently important.

3. The time-honored alkaline douche before coitus is of definite value when the vaginal reaction is highly acid and especially when this reaction includes the cervix.

4. Cervical pathology is a frequent and fairly favorable finding as it can usually be corrected, often with immediate results; excessive and tenacious cervical mucus is the most difficult feature, especially when unaccompanied by apparent cervical pathology.

5. The infantile uterus is less likely to become pregnant, especially when partly rotated backward and the cervix held high out of the seminal pool by a short anterior vaginal wall; frank posterior positions are less unfavorable as they can often be corrected temporarily with a pessary, with fair chance for success.

6. Adnexal pathology (10 per cent), carries a bad prognosis unless operated, even when the patency of one or both tubes can be demonstrated, but the prediction of success should not be made even when operated.

7. Examination of the woman post-coitus, and tubal inflation are indispensable for diagnosis and treatment, the latter having greater diagnostic than therapeutic value. Post-coital examination showed poor, few or no spermatozoa in about 35 per cent and only one of these women became pregnant, although their general average of probability was no different from the others. It seems reasonable to believe that an improvement in the quality of the spermatozoa in these husbands might be the deciding factor, fertility being the sum of the ability of the two individuals.

8. About 15 per cent of patients are hopeless and should not be accepted for treatment; of the remainder in this series who received adequate examination and treatment, a little over 50 per cent have proved successful.

350 Twenty-ninth street.

DISCUSSIONS ON THE SYMPOSIUM ON STERILITY

Henry Parker Newman of San Diego—I cannot speak too highly of the statements made. They are interesting, valuable, and I wish to congratulate the essayists on this very opportune symposium.

If criticism can be offered in any way, possibly it is done on the matter of statistics. Statistics are sometimes misleading and particularly when they are taken largely from our large civic centers, or rather, large cities, where our clinics are visited mostly by members of the laboring class, to a large extent of foreign blood, and not of our native

population. Syphilis is a serious factor and perhaps predominates more largely in that class.

We also must bear in mind that we have mechanical defects to deal with that are not strictly congenital. They often are referred to as infantile developments present at puberty or consequent to puberty, but which constitute an arrested development at puberty. A woman may have a fairly well developed but not normally developed uterus. We find a small narrow cervix with more or less stenosis and closure of the external os. As Loomis pointed out, this is a factor of considerable moment in sterility, because of the obstruction of the canal by a mucous plug.

Displacements, in their relation to sterility, I think, should be considered differently; that is, from the standpoint of the type of development that I have just spoken of, and that of the woman who has borne children. The same is true of infections. The difference is considerable between the nullipara and the multipara.

F. R. Girard of San Francisco—I wish to congratulate the men of this section who have given us these very able papers, and at the same time congratulate the section on the idea of having the symposium on one special subject. It seems to me that we have demonstrated today that this idea is an excellent one. We have obtained a great deal more information than usual out of this meeting by having papers on this one subject only.

The Rubin test has certainly brought a solution of the sterility problem much nearer. I read a short time ago of a very simple thing which can be used in the office without the use of gas tanks, substituting for it simple air inflation. Cody of New York has described this method. (Description of apparatus.) There is no reason why air should not be just as safe as gas, and the apparatus can be rigged up very easily.

It is very interesting to learn that the incidence of sterility in the male seems to lessen. Formerly, in at least 25 per cent of sterile women, the husbands were found to be sterile. This was as far back as five to six years ago. Recent investigations show that 10 per cent to 15 per cent of the men are sterile. It shows that the treatment of gonorrhoea and its prevention are bearing fruit.

Loomis' paper contained something which we do not all agree with, and that is that cervical stenosis plays such a large part in sterility. He has come to the conclusion that 50 per cent have to be dilated. Practically all women who come for treatment of sterility have gone through years of treatment, many of them have been operated on and dilated. But only when we go after the tubes do we get results. Twenty-five per cent to 40 per cent of sterility is due to tubal conditions.

Titian Coffey of Los Angeles—The question of sterility appeals to me very largely from the sociological standpoint. I am not only interested in what causes sterility but in the effect sterility will have upon the nation at large.

It is rather a hard fact to realize that the average native white American woman has very few children. We no longer see the large families of six, eight or twelve children. We see one, two, or possibly three in the family. Our large families are among our foreign population, so that the native-born American woman is not doing her duty to the community at large by not bringing an American child into the world.

When we take into consideration the shifting of the population from the country to the city, we find in the first place that many women are not prepared for motherhood. They do not want children; they want a good time. They want to eat too much and drink too much. Then there are the others who have abortions induced, and again others who do not want children at all and use every means to prevent conception, but who, later in life, would

give their souls to have children when some pathological condition on the wife's or husband's part, as an effect of their social life, makes it impossible for them to have children. Therefore, from that standpoint, it is the duty of the profession to lay stress, and very great stress, upon this fact: that the American woman should be impressed that she should have a larger family while she is in the child-bearing period.

This social problem is interesting from another standpoint also—the financial one—regarding the increased cost of living and the difficulty of raising and educating children. From that standpoint it is necessary at some future date for the Government to take hold of this problem and to stimulate the growth of the Nation in that way. It has been taken up in Germany and France, and America must bend her efforts in the same direction.

Chiropractor Liable for Care, Skill and Knowledge in Diagnosis—Chiropractic quibbling may not avail a chiropractor in Wisconsin, who through negligence, ignorance or unskillfulness fails to diagnose the disease from which his patient is suffering, according to a decision of the supreme court of Wisconsin, April 3, in the case of Kuschler vs. Volkmann; and in diagnosing a case, a chiropractor must exercise the care and skill that is usually exercised by a recognized school of the medical profession. The fact that chiropractors abstain from the use of words like "diagnosis," "treatment" or "disease," said the court, is immaterial. What they hold themselves out to do and what they do is to treat disease, and the substitution of words like "analysis," "palpation" and "adjustment" does not change the nature of their act.

The plaintiff, suffering from nausea, a nervousness and headache following a head injury, applied to the defendant, a chiropractor, in September, 1918, for relief and cure. The chiropractor, believing that the nervousness and headache were due to a derangement of the stomach, treated him accordingly. Treatment proved unavailing, and the chiropractor advised the plaintiff, in May, 1919, to go West, in the hope of relief. The plaintiff did so, but the headaches and dizziness, from which he continually suffered, became more severe, and finally he became at times blind. Sept. 10, 1919, the plaintiff presented himself for treatment at a hospital in Chicago, and there his malady was immediately diagnosed as a brain tumor. An operation was done simply to relieve the intracranial pressure, for because of the long time the tumor had been allowed to grow, it was impossible to remove it.

The chiropractic defendant was charged with responsibility because of alleged negligence and want of understanding and skill. He demurred to the declaration, on the ground that one who treats the sick and injured is entitled to be judged according to the principles and methods employed by the school or sect to which he belongs, and he claimed that he had treated the plaintiff according to the methods used by chiropractors. The demurrer was sustained in the lower court. On appeal, the supreme court of Wisconsin said that had the complaint been grounded on neglect or unskillfulness in treatment only, the action of the trial court would have been correct. The complaint alleged, however, neglect or unskillfulness in diagnosis. While the duty of diagnosis is ordinarily assumed and performed by licensed physicians, it may be assumed by others, and the defendant having assumed to perform that duty was bound to exercise the care and skill in so doing that is usually exercised by a recognized school of the medical profession. The supreme court, therefore, overruled the demurrer and remanded the case to the trial court for further proceedings.—Journal A. M. A.

CHANGES IN WEIGHT IN TREATED SYPHILIS*

By IRWIN C. SUTTON, M. D., Santa Ana, Calif.

In a series of twenty-eight patients treated with bismuth and silver arsphenamin, careful records were made to determine the effect of the treatment on body weight. The patients were nearly all between twenty and thirty years of age and of average height. According to the medico-actural standards of weight and height, they were nearly all underweight.

Almkvist, in 1921, commented on the loss of weight in patients undergoing treatment with mercury, and with few exceptions my experience with bismuth coincides with his. The drug used was bismutol, tartro-bismuthate of potassium and sodium, put up in 3 gr. doses and procured through the courtesy of the H. A. Metz laboratories.

In each of these twenty-eight patients the weight was recorded, and an intramuscular injection of bismuth was then given three times a week until the usual course of eighteen injections was completed, at which time the weight was again recorded. After a four weeks' rest from treatment, the patient was again weighed. He was then given an injection of silver arsphenamin each week for six weeks. The table below shows the weight of each patient before and after treatment with bismuth, and before and after treatment with silver arsphenamin.

TABLE SHOWING WEIGHT CHANGES IN CASES UNDER TREATMENT WITH BISMUTH AND SILVER ARSPHENAMIN

Case	Weight before bismuth treatment	Number of bismuth injections	Weight after bismuth treatment	Weight before silver arsphenamin treatment	Number of silver arsphenamin injections (3 gr. doses)	Weight after silver arsphenamin treatment	Outstanding features
1	130	18	128	128	6	132	Hepatic
2	142	10	141	140	6	141	Poor tolerance
3	139	10	134	134	6	138	Aneurysm
4	168	28	169	168	4	168	Meningo-vascular
5	132	30	130	131	6	135	Aortitis
6	101	18	100	100	6	110	Latent
7	98	18	92	92	6	112	Late cutaneous
8	64	10	60	61	6	63	Tardy congenital
9	99	20	96	96	6	96	Osseous system
10	105	18	111	108	6	104	Myocarditis
11	113	18	112	112	6	110	Late cutaneous
12	143	18	139	140	6	145	Recur. secondaries
13	163	18	168	168	6	172	Tabes
14	175	6	175	175	6	177	Poor tolerance
15	151	18	148	148	8	148	Early paresis
16	167	18	152	153	8	152	Late cutaneous
17	138	18	135	135	8	138	Meningo-vascular
18	149	18	140	140	6	143	Myocarditis
19	161	20	157	159	6	164	Cardiovascular
20	156	20	151	151	6	160	Visceral
21	97	12	84	84	6	89	Gumma lymph glands
22	162	18	171	170	6	170	Meningeal
23	173	18	168	168	6	174	Latent
24	119	18	116	116	6	118	Early tabes
25	114	34	118	118	6	120	Wassermann fast
26	121	10	119	120	6	128	Ch. Nephritis
27	138	18	137	138	8	143	Gastric
28	147	20	146	146	8	151	Osseous system

When bismuth was given, the weight usually decreased; when silver arsphenamin was given it increased. There were several exceptions, usually in patients with central nervous system involvement. Cases 2 and 14 did not tolerate the bismuth,

* Read before the Section on Dermatology and Syphilology at the fifty-second annual meeting of the California Medical Association, San Francisco, June 22, 1923.

as evidenced by local nodular reactions, and Case 21, that of a frail young woman, showed an alarming loss of weight. After treatment with silver arsphenamin, nearly all patients weighed more than at the beginning of the treatment, though they did not all recover completely the loss incurred during treatment with bismuth. Records of weight made from time to time after treatment was finished, however, showed in nearly all patients a permanent substantial gain.

Patients suffering from syphilis do not differ from any other class of patients suffering from chronic diseases in their general underweight, and a surprisingly large number harbor food-dreads or phobias. Almost without exception, they need a fuller, richer diet. In accordance with the suggestions of Walsh and Myers, I put them on a large carbohydrate and fat diet, with all the protein they can take care of. By systematic overfeeding, the patients gain weight and feel much improved. Food phobias and constipation disappear, and they emerge from a vigorous course of treatment physically and clinically improved.

Response of Persons Vaccinated With Triple Typhoid Vaccine—Walter V. Brem, Los Angeles, and Bertha M. Challis, Pasadena, Calif. (Journal A. M. A., September 1, 1923), record the clinical reactions of 134 persons vaccinated with the "triple vaccine" (1) to immunize them against the typhoid group of diseases; (2) to record the titrations of the serums of 110 of the vaccinated persons, and (3) to report some phenomena observed during the work. Rawlin's strain of *B. typhosus* was used. The vaccine was prepared so that 1 cc. contained the agar grown, heat killed (60 C.) organisms—*B. typhosus*, 500,000,000; *B. paratyphosus A*, 250,000,000; *B. paratyphosus B*, 250,000,000. The vaccine was given by three subcutaneous injections at ten-day intervals, the quantities being, respectively, 0.5, 1 and 1 cc. The results were: No reactions: first injection, 52 per cent; second injection: 49 per cent; third injection, 78 per cent. Mild reactions: first injection, 43 per cent; second injection, 45 per cent; third injection, 21 per cent. Severe reactions: first injection: 5 per cent; second injection, 6 per cent; third injection, 1 per cent. Chills: first injection, 16 per cent; second injection, 14 per cent; third injection 3 per cent. There was no striking difference between the reactions of the four groups. The evidence indicates, therefore, that neither previous vaccination nor a past attack of typhoid fever influences materially the clinical reactions to subsequent vaccination. The most striking phenomenon brought out is that the third injection caused a much smaller percentage of mild and severe reactions and chills than did the first and second injections. Two injections, therefore, seemed to produce a definite relative tolerance for the toxins of the vaccine. Neither a febrile nor an apparent general reaction could be induced by the intravenous injection of heat-killed organisms from the whole twenty-four-hour growth on two agar slants. A severe reaction, however, was induced by the living organisms from one agar slant. The same strain of typhoid organisms caused marked febrile reactions in rabbits not previously inoculated when the heat-killed organisms of one-half the growth on one agar slant were injected intravenously. Vaccination with triple vaccine stimulates marked production of agglutinins for each of the three organisms. Lytic bodies against *B. typhosus* and *B. paratyphosus A* are frequently present in normal and immune human serums, and they may interfere seriously with agglutination test made with active serums. They are not found in immune rabbit serums.

REPORT OF A CASE OF SPOROTRICHOSIS*

By V. R. MASON, M. D., and K. P. FROST, M. D.,
Los Angeles.

Although the medical profession of California is familiar with several types of fungus infection of human beings, especially coccidioidal granuloma, it may not be without interest to report an instance of sporotrichosis which we have observed during the past months.

A white woman, 53 years of age, consulted a physician on account of nodules on the left thigh. The present illness began in July, 1922, when the patient first noticed a small nodule on the left thigh just above the knee. This appeared about a month after she began to use a fiber brush to scratch her lower extremities on account of itching. Gradually more nodules appeared and when the patient consulted one of us in October, 1922, there were two small nodules below the knee and a series of cutaneous and subcutaneous nodules extending from the knee to the groin. The cutaneous nodules were firm, purplish, and not tender. One was broken and exuded thick, tenacious pus. The largest nodule was about 3 cm. in diameter. At places a thickened cord could be felt connecting the nodules. The general physical examination was negative. The urine and blood counts were normal. Wassermann's reaction with serum was negative. A needle was inserted into a nodule and the material obtained was streaked on glucose-agar and Sabouraud's medium and the tubes were kept at room temperature. At the end of twelve days colonies appeared. They were white at first, but quickly became fuliginous. A hanging drop preparation showed irregularly septate mycelial threads with numerous singly contoured conidia arising either laterally or terminally or lying free in the medium. A denticule was present at the point of insertion. The organism was studied by Roy Hammack and was found to be a sporothrix both culturally and morphologically. A section of a nodule was removed for histologic study. It showed chronic infection of the subcutaneous tissues, a few giant cells and some down-growth of connective tissue septa. The patient was put on large doses of iodide of potash and on three occasions was given exposures to Roentgen rays. In spite of treatment the lesions progressed and frequent attacks of fever with great swelling of the leg occurred. In June, 1923, eleven months after the onset of the illness, a nodule appeared under the skin of the forehead. It was firm, painless, not moveable and probably arose in the periosteum of the frontal bone. An X-ray of the lungs showed no abnormality. The patient died July 15, 1923. Autopsy and cultures confirmed the original diagnosis.

SUMMARY

A woman of 53 developed an indolent lymphangitis with nodules in the right thigh. A sporothrix was grown from one of these nodules. The disease progressed in spite of treatment with iodides and

*Presented to the Section on Medicine at the Fifty-second Annual Session of the California Medical Association, San Francisco, June, 1923.

X-rays. Eleven months after the beginning of the disease a firm nodule appeared on the forehead, probably arising from the periosteum.



DISCUSSION

Schenck in 1898 grew a fungus from a subcutaneous abscess. The culture was submitted to Erwin F. Smith, who classified the organism as a sporothrix. In 1900 Hektoen and Perkins recovered the same organism from a similar lesion and gave it the name *Sporotrichum schencki*. Following the reports of De Beurmann and Gougerot, which appeared a few years later, the disease was recognized in many parts of the world. Sabouraud observed one of De Beurmann's patients and suggested the use of iodides in treatment; a therapeutic suggestion which has been of great value.

A few remarks should be made concerning the organism, its method of access into the body and the nature of the lesions produced.

According to volume XXII of the *Sylloge Fungorum Omnium* of Saccardo, there are 160 species of *Sporotrichum*, 39 of *Rhinotrichum*, 63 of *Trichosporium* and 7 of *Rhinocladium*. Most of the fungi described as *Sporotricha*, pathogenic for man, on account of the presence of denticules at the point of insertion of the conidia and the early develop-

ment of a dirty brown pigment should be placed with the species *Rhinocladium*. Botanically the only *Sporotrichum* pathogenic for man is the *Sporotrichum carougeai*. Two fungi formerly classified as *Sporotrichum dori*, De Beurmann and Gougerot, 1905, and *Sporotrichum dispar* (Vidal, 1882) should be studied again. The latter certainly, and the former probably, belong to the genus *Norcardia*. The remaining fungi which have been obtained from sporotrichotic lesions in human beings and classified as *Sporotricha* fall into the genus *Rhinocladium* for reasons presented above. Up to the present time, therefore, the fungi described as the etiological agents of clinical sporotrichosis should be tabulated as follows:

Sporotrichum carougeai (Langeron, 1913).

Rhinocladium asteroides (Splendore, 1908).

Rhinocladium beurmanni (Matruchot and Raymond, 1905).

Rhinocladium councilmanni (Wolbach, Sisson and Meir, 1917).

Rhinocladium gougeroti (Matruchot, 1910).

Rhinocladium indicum (Castellani, 1908).

Rhinocladium jeanselmei (Brumpt and Langeron, 1910).

Rhinocladium lesnei (Vuillemin, 1910).

Rhinocladium schencki (Hektoen and Perkins, 1900).

Careful comparative studies of these organisms have not been made so far as we are aware. They have occurred in widely separated geographical areas and some of them have been encountered but rarely, so that it is possible that a definitive classification has not yet been attained.

Clinically the lesions have been classified as localized, generalized, gummatous, tuberculous and lymphangitic. The fungus apparently gains entrance through a break in the skin. A localized lesion forms and the infection is then propagated by means of the contiguous lymphatics or the blood stream. In some instances of disseminated infection, the initial lesion or chancre could not be found and the infection was probably distributed by the blood stream to distant parts. The essential lesion is an indolent, cutaneous or subcutaneous nodule which eventually ulcerates and discharges its contents through the skin. The actual necrotic area is very small compared to the size of the lesion and the discharged material is small in amount. In the lymphangitic form the nodules are usually connected by a firm cord, a circumstance of great importance in diagnosis. In the disseminated forms the organism has occasionally been cultivated from the blood and practically every region and every organ in the body has been known to contain lesions. According to Langeron, the chief element in prognosis is not so much the number as the location of the lesions. The gummatous and other cutaneous forms cure quickly. The lymphangitic form is more resistant to treatment. Testicular localization indicates advanced generalization and involvement of the mucous membranes is of grave omen. Treatment consists in the administration of iodides by mouth or intravenously, injection of the lesions with Lugol's solution, and the applica-

tion of X-rays. The value of the latter is still to be determined.

(Pacific Mutual Bldg., Los Angeles.)

DISCUSSION

Roy W. Hammack (Pacific Mutual Bldg., Los Angeles)—This case presents unusual features in the distribution of the lesions and in the progression of the disease in spite of active treatment. For while dissemination and even generalized infection with the sporothrix may occur, such findings are uncommon, especially when active treatment such as this patient received is begun early in the course of the disease. Two other cases more recently seen in Southern California, in each of which the lesions were in the hand and arm, have responded rapidly to similar treatment and are now apparently well.

The source of the organism and the manner of infection have been studied and better established than is the case with most of the other mycoses. Meyer and others have shown that spontaneous infection of horses, dogs and rats is not uncommon. Yet very few human cases have acquired the infection from such sources. Also there are only one or two recorded cases of direct contact infection from lesion in a human.

The sporothrix grow saprophytically on vegetable matter and infection usually occurs by introduction of the organism from such a source. In both of the cases just mentioned infection followed injury of the hands by rose thorns.

Hypodermic General Anesthesia—Eugene R. Lewis, Los Angeles (Journal A. M. A., October 13, 1923), reports his individual experience covering more than fifteen years' use of scopolamin and morphin in conjunction with local anesthetics in nose, throat, and ear surgery. He has used scopolamin and morphin anesthesia in operating on patients suffering from active pulmonary tuberculosis, renal tuberculosis, lymphatic tuberculosis, bone tuberculosis, pyelonephritis, nephritis, diabetes, anaphylactic asthma, toxicosis, hyperthyroidism, hypertension, hypothyroidism, carcinoma, endocarditis, and myocarditis. Never has a death followed its use. Certain disquieting symptoms occurred in relatively rare instances, tremor, tachycardia, and palpitation. Never has a patient exhibited these symptoms to a degree which interrupted the prosecution of operative work. In very rare instances, excitement and delirium of mild degree are encountered. Lewis values this method of anesthesia because of its safety, its ease of administration, its applicability to cases in which contraindications exist as to the use of ether, chloroform or nitrous oxid, its drying effects on mucous membranes, its adequacy for any operative procedure, and its freedom from unpleasant after-effects. He states very specifically that, while he regards this form of narcosis as safe in experienced hands, he advises against its indiscriminate use and urges the selection of small doses by the beginner until he has acquired thorough familiarity with the effects of these drugs.

A Study of the Action of Calcium in Experimental Cocain Poisoning—Experiments made by Soma Weiss, New York (Journal A. M. A., October 13, 1923), to determine whether calcium salts exert any antagonistic action to that of cocain on the heart show that calcium chlorid exerts no antagonistic action toward that of cocain on the frog's heart, but, on the contrary, the combination is more toxic than is an equal amount of cocain alone, presumably because of the more rapid absorption of the hypertonic solution. From the results of these experiments, as well as those of Karl Mayer himself, it would appear that there is no evidence that calcium salts exert any antagonistic action to that of cocain.

POST-ARSPHENAMINE ERUPTIONS*

WITH SPECIAL REFERENCE TO ETIOLOGY AND TREATMENT

By HIRAM E. MILLER, M. D.

From the Department of Dermatology, University of California Medical School, San Francisco.

The prevention and successful management of the eruptions associated with or following the ingestion of the various arsphenamine products are among the most baffling problems with which the medical profession have to contend. They are encountered by all those whose clientele include a considerable number of syphilitics.

In the last two and one-half years I have treated eighteen patients with post-arsphenamine eruptions of varying severity. Some of these were patients to whom I had administered arsphenamine. The others came to Howard Morrow, to the skin clinic at the University of California Medical School, or to me after the development of their eruptions. From a series of this type, it is impossible to draw any conclusions as to the incidence of such cutaneous reactions. They do, however, give one some insight into their etiology and most successful mode of treatment.

DEFINITION

Under the term post-arsphenamine eruptions are included all of the cutaneous lesions associated with, or following, the ingestion of arsphenamine and neoarsphenamine. It includes urticaria, herpes simplex, simple erythema, macular or maculopapular rashes, lichenoid eruptions and exfoliating dermatitis. At times, the eruptions may simulate any of a number of dermatological entities. It does not include the eruptions occurring around the site of injections.

INCIDENCE

Moore and Keidel report a series of 47,000 arsphenamine injections without the simultaneous use of mercury. They had twenty-one cutaneous reactions in this series, or one in 2238 injections. Lees of Edinburg gave a series of 36,000 injections with mercury simultaneously administered in which there occurred ten severe eruptions and about the same number of minor cases. This is an incidence of one in 1850 injections. Stokes reports thirty-eight skin eruptions in a series of 44,000 injections given in the hospital, with mercury simultaneously administered. This higher incidence of one in 1158 injections is likely more nearly correct, in view of the fact that the Stokes patients were all treated in the hospital where minor eruptions would be more readily noticed. This is found to be true in an analysis of these cases. Of the twenty-one patients of Moore and Keidel, ten were of minor importance; of the twenty of Lees, ten also were of moderate severity; while of the thirty-eight cases of Stokes, twenty-eight were of only mild severity. The simultaneous administration of mercury seemed to play little or no part in the production of the skin eruptions in these cases.

CLASSIFICATION

A classification of the eruptions provoked by

*Presented to Section on Dermatology and Syphilology at the Fifty-second Annual Session of the California Medical Association, San Francisco, June, 1923.

arsphenamines is a difficult task, due to the many types and degrees of dermatitis encountered. Stuhmer gives us the following simple, but comprehensive classification. It seems to be fairly satisfactory:

1. Acute Vasotoxic Arsphenamine Dermatitis.

These eruptions appear immediately or within a few hours after treatment. He includes in this group the acute erythematous and urticarial lesions and so-called "fixed" arsphenamine eruptions. He believes that certain small areas of the skin are hypersusceptible to certain toxic properties in the arsphenamine molecule in these cases.

2. Sub-acute Anaphylactoid Dermatitis.

These reactions appear in from six to twelve days after the first injection of arsphenamine. Even though the second and third injections have been given, they are not believed to have had any effect on the causation of the eruption. The author believes that this form of eruption is similar to serum sickness, and that subsequent injections of arsphenamine can be given without danger. The rash and temperature curve are those of serum sickness.

3. Chronic Arsphenamine Dermatitis.

- (a) Early. This form develops immediately after the fifth or sixth injection.
- (b) Late. This type may develop from a few weeks to a few months after the completion of a course of treatment.

The clinical course of the early and late forms may be similar. They begin as apparently harmless erythematous eruptions on the extensor surfaces and may end as a severe generalized weeping and exfoliating dermatitis from which the patient may die. The author lays emphasis on the fact that after the subsidence of the eruption, a dermatitis remains for some time in the areas of predilection of seborrheic dermatitis. He believes that a patient with a seborrheic skin is more susceptible to arsphenamine eruptions than is a normal individual.

Of the eighteen cases in my series, one is of the first group, two of the second group, and fifteen of the third group. Of those in the third group, fourteen developed early, appearing a few days after the third to the sixth injection. The following chart will bring out the important points in these eighteen cases:

All of the patients in this series were in the late stages of the disease with the exception of two who were non-luetic. I do not think that we can place any importance on the late stage of the disease in these patients, inasmuch as the presence of the disease does not seem to be necessary to the development of the eruptions. The largest number were between 30 and 40 years of age. The youngest patient was a congenital leucic 13 years of age; the oldest was a man of 47.

The largest number of eruptions developed after the third injection of arsphenamine, but the most severe ones developed after a course of six or more injections. In my experience, the longer the time interval between the ingestion of arsphenamine and the development of the dermatitis, the more severe and prolonged is the eruption.

The milder eruptions cleared spontaneously, while under local treatment, in about a week's time. The severe eruptions cleared in one to five months under local treatment and in three to six weeks under the use of sodium thiosulphate orally and intravenously. This form of treatment will be taken up in detail later in this paper.

Practically all of these patients received their arsphenamine without the simultaneous administration of mercury. Some authorities assume that mercury may injure the kidney in such a way as to prevent the normal elimination of arsenic and thus predispose the patient to arsenic dermatitis. An analysis of the cases of Moore and Keidel, of Lees, and those of Stokes, seems to prove that this is not the case. Mercury simultaneously administered with arsphenamine apparently plays no part in the development of the arsphenamine eruptions.

Eleven of these patients received neoarsphenamine.

IMPORTANT FACTS IN 18 CASES OF POST-ARSPHENAMINE ERUPTIONS

Case	Sex	Age	Stage of Disease	Preparation Used	No. Inj. Before Dermatitis	Mercury Therapy	Previous Dermatitis	Duration of eruption	Severity	Treatment
1	f	13	congenital	Neoarsphenme.	8	none	Seborrheic Dermatitis ears and scalp.	3 months	marked	local only
2	m	42	late	Arsphenamine	3	none	Seborrheic Dermatitis of thighs and groins.	2½ weeks	moderate	local only
3	m	39	late	Arsphenamine	3	none		1 week	mild	local only
4	m	39	late	Arsphenamine	4	none		1 week	mild	local only
5	m	38	late	Arsphenamine	6	3 mercury salicylate		1½ weeks	mild	local only
6	f	42	late	Neoarsphenme.	6	none		3 months	died	local only
7	f	26	late	Neoarsphenme.	4	none		3 weeks	moderate	local only
8	f	40	late	Arsphenamine	12			3 months	marked	local only
9	m	32	late	C. N. Sluss Neoarsphenme.	4	none	Very little hair on scalp. Much scurf.	5 months	marked	local only
10	f	42	late	Neoarsphenme.	6	6 mercury salicylate	Much scurf in scalp.	3 weeks	marked	local and sod. thiosulphd. intravenously
11	f	27	late	Arsphenamine	3	none		3 weeks	moderate	local only
12	m	39	non-luetic	Neoarsphenme.	2	none	Had a severe generalized Seborrheic Dermatitis.	1 month	marked	local and sod. thiosulphd. intravenously
13	m	47	late	Arsphenamine	6	none		5 weeks	marked	local and sod. thiosulphd. intravenously
14	f	26	non-luetic	Neoarsphenme.	3	none	Asthma and eczema.	5 weeks	marked	local and sod. thiosulphd. intravenously
15	f	24	late	Neoarsphenme.	3	none		1 week	generalized	local only
16	f	28	late	Neoarsphenme.	3	none		1 month	moderate	local only
17	m	38	late	Neoarsphenme.	6	none	Very little hair on scalp. Eczema of legs.	6 weeks	marked	local and sod. thiosulphd. intravenously
18	m	34	late	Neoarsphenme.	4	none	Very little hair on scalp. Much scurf.	3 weeks	marked	local and sod. thiosulphd. intravenously

mine and seven arsphenamine. This may give a false impression as to the relative incidence of the eruptions from the two preparations. However, when one considers that neoarsphenamine is used almost exclusively in private practice in this vicinity, it will help to correct this impression. From my experience, I believe that eruptions develop as frequently after neoarsphenamine as after arsphenamine.

ETIOLOGY

The literature of the last few years has been replete with possible causes of these eruptions and of arsphenamine reactions. Toxic properties in the drug itself were at first looked upon as the main etiological agent. Improper alkalization, oxidation, impurities in the water and the tubing employed have all been definitely demonstrated as being responsible for reactions of varying severity. It is, however, very doubtful if any of the above are ever responsible for skin eruptions; the fault, as Ehrlich expresses it, seems to lie in the patient himself. Thom asserts that it is not a question of how the drug reacts on the patient, but how the patient reacts to the drug. Stuhmer and Lees have mentioned the possible role of seborrheic dermatitis. Stokes believes that chronic focal and intercurrent infections play an important part.

Six of my patients showed definite evidence of seborrheic dermatitis and had been treated for it at intervals prior to receiving antiluetic therapy. One of these had a severe generalized seborrheic dermatitis and was clinically and serologically free from syphilis. He was given neoarsphenamine, due to an error in diagnosis. After two injections, the skin condition changed into a severe generalized exfoliating dermatitis.

One patient had asthma. Due to bony changes in the nose, she was erroneously diagnosed as being a luetic and given neoarsphenamine. Three weeks after the third injection she developed a severe exfoliating dermatitis. Asthma is believed to be due to some hypersusceptibility or idiosyncrasy. Dermatitis or other skin changes are often associated with it and are undoubtedly due to the same cause. In this individual case, there was also an associated idiosyncrasy to arsphenamine. The arsphenamine did not, however, in any way affect her asthma.

Perhaps seborrheic dermatitis, like the cutaneous changes often associated with asthma, is an external manifestation of some hypersensitiveness, idiosyncrasy, or allergic instability. Focal or intercurrent infection may pave the way for or be the basis of this idiosyncrasy. It certainly plays a part in some cases of seborrheic dermatitis. One has but to recall the patients with seborrheic dermatitis whose eruptions have resisted all local and internal treatment only to clear over night after the removal of an abscessed tooth or other focus of infection.

I believe that the cause of post-arsphenamine eruptions is an idiosyncrasy or susceptibility of the patient to arsphenamine and is not due to the toxic properties of the drug or its mode of administration. I further believe that seborrheic dermatitis is an external sign of this susceptibility and is a

warning which we should heed. I have learned to look upon all cases of seborrheic dermatitis as potential cases of arsphenamine dermatitis. I make it a point to be sure that they are clear of the dermatitis before arsphenamine is administered. If this procedure is followed I feel certain that it will lessen the incidence of post-arsphenamine eruptions.

TREATMENT

Local Applications

The external manifestations of the disease can only be treated symptomatically. No single remedy will give satisfactory results in all cases. For the milder eruptions, calamine lotion or a simple dusting powder will give the best results. In the more severe cases, calamine liniment, zinc oxide ointment or Lassar's Paste without salicylic acid may be used. In general, the lotions and powders cause the eruptions to involute most rapidly, but the patient will prefer the paste or ointments as they will relieve the dryness of the skin which the lotions accentuate. In the hands of some, the so-called colloidal bath has given excellent results. I have had very little success with it. Stimulating medications should not be used in any form except for the localized areas of dermatitis that may persist after the involution of the generalized eruption. It should always be borne in mind that the dermatitis is an external manifestation of an internal condition. All that we can hope to do is to help the skin, with soothing applications, withstand an attack from which it is already the loser. Any therapy that is to reach the cause of the disturbance must be given internally.

INTERNAL MEDICATION

In 1920, Revaut of France described the use of sodium thiosulphate orally and intravenously in the treatment of arsenical dermatitis. In 1922, McBride and Dennie of Kansas City described their experiences with this mode of treatment.

The theory is that sodium thiosulphate, a derivative of the non-metal sulphur, converts the metal arsenic into non-toxic insoluble sulphides, which are in time eliminated from the body. Whether this is what actually happens in the body is difficult to say. The interesting observation is that it greatly shortens the course of the eruptions.

Eight cases in my series were treated with sodium thiosulphate, intravenously and orally. They all showed marked improvement under this treatment. They did not, however, begin to improve until after the fourth or fifth injection, while the most marked improvement was noticed a day or two after completion of the course of treatment. This retarded evidence of improvement may be due to the fact that it takes some time for the body to repair the damage already done by the arsenic. Saline cathartics and large amounts of water by mouth tend to hasten elimination.

Sodium thiosulphate should be used in all cases of arsphenamine dermatitis that fail to improve under local treatment after a period of a week or ten days. I think it advisable to wait this length of time, in view of the fact that a large percentage of the cases will clear spontaneously. No

toxic or disagreeable symptoms, due to the drug have been experienced; nevertheless, unnecessary intravenous therapy of any kind should be avoided as much as possible. This type of therapy is adapted to those cases classified by Stuhmer, as group 3, or the chronic arsphenamine dermatoses.

The technic of administration is that of neoarsphenamine. The drug for intravenous use must be pure and must be sterile. It has been put on the market by the H. A. Metz Laboratories in air-tight, sterile ampules, similar to arsphenamine. A pamphlet of instructions accompanies each course of treatment. In general, the injections are given at twenty-four hour intervals for the first four smaller doses, and at forty-eight hour intervals for the two to four succeeding larger doses. The dosage is 0.3, 0.45, 0.6, 0.9, 1.2 and 1.9 grams respectively. It is given intravenously by the syringe method dissolved in ten to twenty cubic centimeters of sterile distilled water. This is supplemented by one gram of the drug given orally three times a day dissolved in water.

One course of treatment, consisting of six to eight injections, will generally accomplish as much as can be expected from the drug. Many of the patients will have a few areas of dermatitis remaining after the completion of the course of sodium thiosulphate. These are generally in the distribution of a seborrheic dermatitis and clear in a few weeks with the use of local, mild antiseborrheic remedies.

Lees recommends the use of sublimated sulphur, 30 grams three times a day for its neutralizing effect on the arsenic. The drug given by mouth cannot accomplish the same results as the derivatives of sulphur given intravenously. It may be given in this way, however, when it is impossible to obtain the sodium thiosulphate for intravenous use.

INFLUENCE OF POST-ARSPHENAMINE ERUPTIONS ON THE PATIENT'S SYPHILIS

The blood serum during an attack of dermatitis is often found to be negative and it may remain so for some time afterwards. A recent article of Gougerot warns us of the danger of assuming that this is permanent and urges a careful observation of these cases for a number of years.

One case in my series had a negative Wassermann reaction at the time of her dermatitis. It had been strongly positive ten days previously. I was unable to observe her after the dermatitis cleared. Three other cases in which the Wassermann was taken immediately after the disappearance of the eruptions were found to have the same serological findings as before the development of the dermatitis.

FURTHER ANTILEUTIC TREATMENT OF THESE PATIENTS

Practically all of these patients remain intolerant of the drug for months or years after their arsphenamine eruptions. In the severe cases, the danger of a recurrence of the dermatitis is such a serious one that it is advisable to continue the treatment with mercury and iodides. In the milder

cases, if arsphenamine is to be used it should be used cautiously. Intradermal tests with a small quantity of arsphenamine solution will generally tell if the patient still has an idiosyncrasy to the drug. Treatment with mercury and iodide should not be started until all areas of dermatitis have entirely cleared.

SUMMARY

1. Of eighteen patients with arsphenamine eruptions, seventeen of them developed early in the course of the administration of the drug.
2. Seborrheic dermatitis in a patient seems to predispose him to post-arsphenamine eruptions.
3. Arsphenamine eruptions occur as frequently after neoarsphenamine as after arsphenamine.
4. Sodium thiosulphate intravenously and orally greatly shortens the course of the eruptions.
5. Further antileutic treatment in the severe cases of post-arsphenamine dermatitis should consist only of mercury and iodide.

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DISCUSSION

Howard Morrow, M. D., Butler Bldg., San Francisco—It has been our misfortune to have seen many arsphenamine eruptions. Two ended fatally and many were very severe examples of generalized exfoliative dermatitis.

The generalized cases seldom appeared without warning. Nearly all gave a history of a mild eruption following the previous arsphenamine injection. Had this warning been taken, and no other arsphenamine given, many of the severe eruptions might have been avoided. One woman, who previously had developed a severe exfoliative dermatitis from arsphenamine, went for two years without arsenical treatment. After much persuasion on the part of the patient, her physician thought it safe to repeat the arsphenamine. Notwithstanding the fact that two years had passed without treatment and only 0.2 arsphenamine was given, the patient developed a severe generalized exfoliative dermatitis which took two months to clear.

The injections of sodium hyposulphite have been of great value to us, but in some cases even with this type of treatment, the improvement has been slow.

A history of mild eruptions following arsphenamine should be a warning not to repeat the arsphenamine and to treat the patient by other methods.

Samuel Ayres, Jr., M. D., Brockman Bldg., Los Angeles—I heartily endorse the sentiments of Miller and Morrow in urging prompt discontinuance of arsenical medication following the appearance of any erythematous rash. Stuhmer may be correct in his belief that a certain type of eruption is analogous to serum sickness and does not contraindicate the further administration of arsphenamine, but the positive clinical differentiation of this type would no doubt offer some difficulty. I feel that the welfare of the patient demands a more conservative attitude. It should be a matter of routine to inquire before each injection whether any rashes or itching followed the last treatment. Itching may be as important a danger signal as an actual eruption. It goes without saying that the acute exanthemata will be definitely ruled out before a given rash is attributed to a drug. I shall never forget a serious epidemic of scarlet fever in a large Eastern hospital, which resulted from the carelessness of the consulting dermatologist in failing to consider this possibility.

A routine phenolsulphonephthalein function test before any treatment is given will sometimes reveal seriously impaired kidneys and warn against the administration of harmful amounts of arsenic or mercury.

I was very much interested in Miller's remarks concerning the predisposing influence of seborrheic tendencies to post-arsphenamine eruptions.

I do not agree with Miller that it is desirable to wait for a week or more following the appearance of a post-arsphenamine eruption before administering sodium thiosulphate. If this drug is harmless, as everyone seems to agree, and if it acts as an antidote to a poison, as experience has apparently demonstrated, then, theoretically, the sooner it is given, the less will be the toxic effects from the arsenic. The skin is not the only tissue which may be affected. I have seen a case of acute yellow atrophy of the liver come to autopsy following the administration of neoarsphenamine.

Albert M. Meads, M. D., Hutchinson Bldg., Oakland—Miller has emphasized the importance of watching for minor skin eruptions, as well as for severe eruptions, following the injection of any of the arsphenamines. The relationship between such eruptions and the amount of salvarsan given at each injection, in our experience, has been noticeable. The syphilitic clinic of Alameda County Hospital has made it a point not to give more than six decigrams of neoarsalvarsan at a single dose in routine treatment, and we have found that severe reactions of all kinds have not been evident. No severe eruptions have been noticed and but two minor eruptions seen in women following the first injection. Subsequent injections did not aggravate the condition, so there is a question as to the origin of the rash. Clinic cases, of course, are not watched as carefully as they might be, the patient being trusted to report any unexpected occurrence. A severe eruption at least would have been reported to the physician administering the drug, but this has not been the case. About fifty cases a week, men and women, are under treatment at the present time.

In my private work my experience is limited to one case of exfoliative dermatitis occurring after the second dose of neoarsalvarsan in a non-luetic case, and to a few cases of transient oedema of the lips, face, and other parts, occurring almost immediately after the injection and clearing up quickly under a small dose of adrenalin. Possibly I have overlooked the less pronounced eruptions, but I can say that since adopting less than the maximum dose there has been a decided decrease in reactions in any form in cases under my observation. Certainly Miller's paper will cause me to be more watchful for the less pronounced eruptions and will prompt me to be a little more cautious in pushing arsphenamine in such cases.

Hiram E. Miller (Closing)—I had hoped that in the discussion someone would give us his experience in treating post-arsphenamine eruptions with sodium hyposulphite or the relative number of cases he had seen develop after arsphenamine and neoarsphenamine therapy. Ayers mentions the value of phenolsulphonephthalein function tests. They are of definite value in determining renal function but the post-arsphenamine eruptions are apparently due to a hypersusceptibility to arsenic and lowered renal function plays a minor part. In the eighteen cases in my series, the urine findings were normal in all except two cases, and in these two only for two days during the beginning of the eruption was there any albumen present in the urine.

We should aim to take every precaution to prevent these eruptions and once they have occurred to use every means at our command in clearing them up. Sodium thiosulphate intravenously and orally is of definite value in the treatment of the eruption.

THE MANAGEMENT OF FRACTURE OF THE BASE OF THE SKULL*

By HARRY HYLAND KERR, M. D., C. M.,
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Fracture of the base of the skull per se has no mortality. Death is due to intracranial injury and not to displacement of the fragments. In the severe crushing injuries with gross bony changes, the accompanying cerebral traumatism is so severe that death occurs immediately or within the first few hours.

In the cases that survive this period, the accompanying hemorrhage or secondary edema is responsible for death from the increased intracranial pressure.

A review of the vital statistics of the District of Columbia for the past twenty years shows a steadily rising death rate from fracture of the skull. Though the total death rate from all causes has fallen off from 21.74 per 1000 in 1900 to 14.77 per 1000 in 1920, the death rate from external and violent means has risen from .74 per 1000 in 1900 to .83 per 1000 in 1920. An analysis of the causes of violent death reveals again a steadily increasing percentage due to fracture of the skull.

In 1900 11 per cent of the violent deaths were caused by fracture of the skull.

In 1910 14.8 per cent, and in 1920 15.9 per cent.

As might be expected, 66 per cent of deaths from fracture of the skull occur in the first four hours after injury. Twenty-four per cent within seventy-two hours to ninety-six hours, and 10 per cent after that time. It is probable that the larger group of immediate or very early deaths cannot be affected by treatment, but there is left an appreciable percentage of cases (33 per cent) that should be improved by a better understanding of the problems involved.

As meningitis was only mentioned as the cause of death in two of all the cases of fracture of the skull, we can assume that in the vast majority this is a negligible factor.

Fractures involving the base of the skull are linear in type. There is no bony deformity, but from the anatomical conditions, they are always accompanied by injury to the basilar dura and intradural hemorrhage. As is well known, the dura over the vault is loosely attached to the bone and usually not injured in fractures in this region, unless there is a depression with indriven fragments. When hemorrhage occurs in fractures of the vault it is produced by tearing of the meningeal arteries that groove or tunnel the bone. In such event the hemorrhage is extradural. The hemorrhage is limited to the immediate injury, and as it advances it dissects the dura from the inner table. In these cases, the accumulation of pressure is gradual, easily associated with the "lucid interval" and manifests itself by localized pressure with mono- or hemiplegia.

The dura over the base of the skull is so intimately attached to the bone that even a slight fracture is always accompanied by injury to the dura and the escape of the resulting hemorrhage into the

* Read before the Utah State Medical Association, June 20, 1923.

subdural or subarachnoid spaces. This hemorrhage may be arterial or, when the dural sinuses are injured, venous. The hemorrhage meets with little or no resistance, and bleeding occurs freely between the dura and the brain. The result is a relatively rapid increase in intracranial pressure.

Most fractures of the base of the skull are compound, in that the paranasal sinuses or the middle ear is involved. This makes itself manifest by hemorrhage from the nose, mouth or external auditory meatus. Linear fractures of the posterior fossa not involving the temporal bone are usually not compound. The communication of the fracture, even indirectly with the outside, of course adds to the possibility of infection as a dangerous complication. It is, however, surprising how seldom death occurs from this factor, and as I have said above, there are only two cases in the statistical study where meningitis was given as a cause of death in the fractures of the skull.

The clinical picture of fracture of the base of the skull is characteristic. The immediate loss of consciousness accompanying the injury due to concussion is followed by a varying degree of mental disturbance that depends on the cerebral injury and the resulting compression. In the early hours, the blanched skin, the clammy sweat, the dilated pupils, and the rapid pulse of the unconscious patient bespeak the immediate contusion of the brain. If compression supervenes from hemorrhage the unconsciousness will continue, but the clinical picture will gradually change. The pulse becomes slow and full, the face and scalp congested, the breath stertorous and labored, and the flaccidity will give way to restlessness and semi-consciousness that make the patient extremely hard to control. The blood pressure in the early stage of concussion is low, but with the onset of compression, the systolic pressure will rise, while the diastolic pressure tends to lag behind. As pressure increases unconsciousness depends, and the restlessness gives way to deepening coma.

The mechanism underlying these phenomena is well known. With the addition of free hemorrhage within the non-expandable cranial cavity, first the cerebral fluid is displaced, then the venous blood from the thin-walled veins and finally, if the pressure continues to increase, the arteries themselves are obstructed, with the resulting anemia of the brain. In an effort to maintain the cerebral circulation against the increasing intracranial pressure within the skull, the systolic pressure is gradually increased and the cardiac impulse slowed. It is during this period of gradually increasing intracranial pressure that well-directed treatment may save life. If the pressure is allowed to advance to the point where the intracranial pressure rises above the systolic pressure, Kocher's fourth stage of compression develops, and the time for interference has passed.

In the management of cases of fracture of the base of the skull, nothing can be done in the group of severe crushing injuries with immediate death, or death within the first few hours. It is the gross cerebral injuries that cannot be controlled and cannot be repaired that are responsible for the mortality. In the cases that survive this immediate

mortality, control of the complications will definitely reduce the number of deaths. Our aim should be to ascertain as early as possible the degree of intracranial pressure. If it is high and the patient already in the second or third stage of compression, the cerebral circulation is threatened and indications are definite for immediate interference. The situation is a desperate one, and heroic measures may be necessary to control the rapidly increasing intracranial pressure. Here Cushing's decompression operation is useful. Such an operative procedure, however, should add not one ounce more to the load the organism is laboring under. For that reason a general anesthetic, such as ether or even gas-oxygen is definitely contraindicated. Frequently no anesthetic at all will be necessary, but even with a comatose patient any attempt at manipulation or operation will arouse him to a restlessness that will make surgical procedure impossible. The indications are definite for local anesthesia in decompression of the fracture of the base of the skull. The operative area should be infiltrated with one per cent novocain, preceded by a heavy hypodermic of morphine if necessary. A right-sided subtemporal decompression is the operation of choice, though the evidence of maximum pressure elsewhere may justify decompression in that region. The Cushing operation, through a vertical incision and separation of the fibers of the temporal muscle, exposes the skull where the bone is thinnest and most easily removed. A stellate incision of the dura allows the escape of blood and bloody cerebrospinal fluid and decompresses the silent temporal lobe. The resulting brain hernia compensates for the increase of pressure from the accumulated hemorrhage. If a unilateral decompression does not suffice, the procedure should be immediately repeated on the opposite side. If hemorrhage is free, drainage may be necessary. In certain cases a torn sinus, if accessible, can be occluded by a muscle-graft.

In the less desperate type of case, where indications do not point to an extreme pressure, but where the diagnosis of a fracture of the base of the skull is clean-cut, a question of judgment will often decide the life or death of the patient. In such cases we have many guides as to the progress of the intracranial pressure. The old clinical signs of slowing pulse and deepening coma may not be sufficient to tell us definitely enough of what is going on within the skull. Careful and frequent blood pressure readings made by the same observer are of great value. Ophthalmoscopic examination in the hands of an expert may show a gradual advance of pressure in the retina. Again, a carefully performed spinal puncture with or without the use of a manometer will contribute materially to our knowledge of the case. If any of these signs or symptoms indicate a definite and steady rise of intracranial pressure, then our aim should be to control that rise as best we may.

When the signs and symptoms indicate a mild and gradual increase of intracranial pressure, use of hypertonic salt solution may control the situation. The intravenous injection of 100 to 200 cc. of hypertonic salt solution will temporarily reduce brain-bulk and decrease the intracranial pressure.

This effect, however, is temporary and if used will necessarily have to be repeated. Since hypertonic salt solution injected into the intestine has the same effect experimentally, Dowman of Atlanta has suggested the frequent and repeated administration of full doses of magnesium sulphate by mouth. In the treatment of this class of cases he has found a distinct benefit from its use, and, with a very limited experience with it, I can indorse his claim.

When there is a more rapid and more distinct increase in intracranial pressure following the injury in a case of fracture of the base of the skull and where one hesitates to operate, spinal puncture drainage will often suffice. It should be used, however, with extreme caution. If the pressure is at all high and where doubt exists as to the safety, it is probably wise to discard this treatment for decompression under local anesthesia. If, however, spinal puncture is used, it will probably have to be repeated.

Careful observations should be frequently made. If the treatment outlined above does not control the advancing increased intracranial pressure, then operative interference should be resorted to immediately.

In cases of fracture of the base of the skull where immediate compression has been controlled so as not to become excessive, we occasionally see a recurrence of compression several days after injury. In these cases the compression is caused by secondary edema that follows the original cerebral contusion. In these cases the use of hypertonic salt solution or repeated doses of salines may be most effectual. However, as before, if their use does not control the pressure, one should not hesitate to perform a decompression.

The value of decompression in fracture of the base of the skull is still a debatable question. There have been statistics published both for and against its use. Mixster of Boston analyzed the cases for a period of twenty-seven years in the Massachusetts General Hospital. Of the cases treated up to 1900, 9 per cent were operated upon with a total mortality of the entire series of 68 per cent. Of the cases treated between 1900 and 1911, 23 per cent were operated upon with a mortality of 54 per cent. Of the cases treated between 1911 to 1917, 71 per cent were operated on with a mortality of 36.5 per cent. These figures strikingly demonstrate the decrease of mortality where operation was used. His figures again show the value of operation in the early stages of compression rather than operation as a desperate last resort. Of the operated cases where operation was performed within the first forty-eight hours, the mortality was only 41.2 per cent, while in those so treated more than forty-eight hours after injury the mortality was 71 per cent. In a similar study of a small series of cases at the Garfield Memorial Hospital I find that the mortality in cases where operation was not used was just about twice that of the mortality in cases where operation was made part of the treatment. My experience, therefore, convinces me that decompression is definitely indicated in all cases of fracture of the base of the skull that show increasing intracranial pressure. This decompression

may be accompanied by the use of hypertonic salt solution or salines by mouth, by repeated lumbar puncture or finally by subtemporal decompression operation.

CONCLUSION

1. With the exception of the group of cases with severe crushing head injury and death within the first few hours, the mortality in fractures of the base of the skull is almost entirely due to increase of intracranial pressure from early hemorrhage or late edema.

2. Careful observation and repeated notations of the blood pressure, pulse rate, retinal changes and spinal fluid pressure should be made in all cases.

3. A slightly increasing pressure may be controlled by intravenous injection of hypertonic salt solution or the administration of saline by mouth.

4. In the cases with rapidly rising pressure or where the above does not suffice, decompressive operation should be performed under local anesthesia.

6. The use of decompression either by hypertonic salt solution, spinal puncture or operation will definitely decrease the mortality in the cases under consideration.

Reciprocal Responsibility of Health Officer and Other Public Officials—The activities of any public service board should be free from political influence. The ideal condition, so far as such is obtainable, would be to have the service divorced entirely from all interference on the part of those persons holding positions by virtue of their political affiliations. A health board or any other public board, hampered by political machinations, is a travesty on efficiency. Discord and lack of harmony among the members and employes is the immediate and direct result. Aside from internal disruption, which is a corollary of outside interference, there is the more important result of the loss of usefulness in the service to the public. Therefore, to insure a maximum of efficiency, the appointments should be made solely on a basis of merit and fitness, and the term of office determined by results. . . .

Volunteer health organizations have their responsibility. With a reciprocal attitude, they are valuable adjuncts to the activities of the health officials, and, if the program is suggested by the health authorities, they may be eminently useful. But there must exist a mutual appreciation of the functions and prerogatives of both, and an acknowledgment by these auxiliary bodies of the right of domination in health activities by the State board. . . .

Scientific facts on which health work is founded are as certain as those which lie at the basis of astronomy, for example. Both are the practical development and application of fundamental scientific principles and, however divergent in most respects, the physical laws which are operative in one are wholly applicable to the other. (Oscar Dowling, *Journal A. M. A.*, July, 1923.)

Discussion (by C. W. Garrison, Little Rock, Ark.)—Public health is challenging the health officer of today to initiate a program of right living, involving both eugenics and environment. Public health is as distinctly a branch of medicine as is surgery or obstetrics, and a health officer should not only be as highly trained technically in his specialty as the surgeon, but should possess unquestionable honesty, adaptability, courage, leadership, and diplomacy.

THE PLACE OF MANIPULATION AND CORRECTIVE GYMNASTICS IN TREATMENT*

By R. TAIT McKENZIE, Philadelphia, Penn.

I think this meeting is to be congratulated on two things: First, that physiotherapy has now become a definite part of the medical profession by being made a section of the Medical Society of the State. And that is very significant. We are to be congratulated, also, on having had a man like Goldthwaite, who has devoted such a long period of his life to the study of the physiology and the anatomy of posture, to give us such an inspiring and illuminating address as he has this afternoon. Much of the pioneer work in physiotherapy has, unfortunately, come from outside the profession, and we have been slow—too slow—to adopt many of the means of treatment well known to those whose only training has been empirical.

Let me mention two names only: Hugh Owen Thomas of Liverpool was a bone-setter, and from the very beginning of time there have been men who have discovered and successfully practiced the manipulation of joints for the correction of certain morbid conditions because they have acquired that almost instinctive feeling for the breaking down of an adhesion, or for the correction of a misplacement. Fortunately, in the case of Hugh Owen Thomas, this information which he acquired was passed on into good hands, passed on into the hands of Robert Jones, now Sir Robert Jones, his nephew, who, educated and qualified as a surgeon, put into practice many of the things which were taught him empirically by his uncle.

Let us take an example. It is a fact that, after certain injuries of the knee, wrenches or sprains which have been put up in a splint with the knee straight, there is an imperfect recovery, and that the knee remains painful and more or less stiff. Thomas discovered that, if you take a knee in that condition and bend it to a right angle, and then give it a sharp twist, something cracks and the patient gets immediate relief. What happens? Adhesions that had been formed by keeping the knee in a fixed position for a long time were stretched or torn by this simple manipulation, because, when the knee is flexed at a right angle, it is in the most favorable position for rotation. By that manipulation alone he frequently got most striking recovery of function and relief of wearing pain.

Take another instance. It is familiar to all of us who have had to do with injuries about the ankle, to see the ankle maltreated in the examination. Very often the surgeon will flex, extend, and twist it in a more or less aimless way, discovering pains in certain movements and finding that in certain positions there is no pain. But too often he does not analyze the exact reason of the pain. He finds, for example, that if the ankle is extended it is painful, and that if it is flexed it can be moved very freely, without very much pain. Now, if, instead of pump-handling the joint, or without waiting to get an X-ray, he would carefully examine the

attachments of the external lateral ligament, place his finger on the attachment of the anterior fasciculus, or the posterior fasciculus, he would, in a great many cases, be able to make an absolute diagnosis. And then if, in a purely mechanical, common-sense way, the ankle is so strapped that the injured fasciculus cannot be overstretched, there is no reason at all why the joint should not be kept in movement in all other directions, from the very first.

That is also true of the wrist. Most Colles' fractures are due, not to pure accident, but to carelessness or physical ignorance of the fine art of falling. When one has to fall, if fall one must, do not put the arm out straight and fall upon the wrist in that position (indicating). Do not persist in putting up the wrist in such a way that adhesions can become firmly established about the injured capsule and tendon-sheaths and thus cause the greatest amount of deformity and the slowest rate of recovery. If we put the wrist in this flexed position and hold it down by a splint, you will be unable to exercise your flexors. If you try from this position to close your fist, you will see that it is practically impossible. If, however, you put it up in this extended position, and then try to close the fist, the flexors will be found to act almost automatically and can be used practically from the first. If the joint is put up in bad position with the fingers straight, it is impossible to have a quick recovery, because, after the splint is removed, you have to break down the adhesions that are formed during that period of quiescence, that have formed when the tendons are in the worst possible position, and you get a very slow and imperfect return to the normal. If, however, you put it up in the extended position and allow free movements of the fingers from the first, you do not get the adhesions forming at all, or if they do form they are very easily stretched.

It is an interesting experience to feel under the fingers the sensation of a tearing adhesion. An adhesion of a few days' formation will tear almost like blotting-paper. It is a very soft feeling that you get. When it is a little older, it is a rougher, grating feeling; but an old adhesion very often snaps with a very distinct crack.

Another bone-setter of great ability was Wharton Hood, and he passed on the information that he had gained in the practice of his art to Frank Roemer, who wrote a book on modern bone-setting for the medical profession, which would do us all good to read, because he explains the contribution that they have made, and shows the reasons for their success.

I could go on with other joints like the shoulder and the elbow, but this will, I think, suffice to show what I mean.

During the war we came across a great mass of cases that crowded our hospitals suffering from deep, lacerated scars. They came in throughout the entire war, particularly in its first years. Some of these wounds were terrible to see, and sometimes a scar which was comparatively small upon the surface had its tentacles spread through the tissues underneath, strangling vessels and pinching nerves, causing acute pain, lowering the circulation, and

* Presented before the joint meeting of the California Association of Physiotherapists and the American Physiotherapy Association, San Francisco, June, 1923.

involving muscle, tendon and bone in a way which was most deplorable in its results. It was for cases of this kind that we felt the urgent need of physiotherapy and that the organized bodies of physiotherapists, both in England and America, made their place. These cases were first of all treated for pain by the application of heat and various forms of electricity; but, finally, it came to a question of stretching and manipulation, and sometimes most unpromising cases, by persistent work and efforts, were enabled to make a good recovery.

Another class of cases that we had—that we always have—were those in which the nerves had been divided and reunited by suture, with consequent slow re-establishment of motion. The treatment was very much the same as for anterior poliomyelitis. The lines of communication have been destroyed, completely or partially, in both cases. It was for those patients that we found the necessity, not of manipulation only, but of re-education.

It is unfortunate that our neglect of these two procedures has been such that we have given great vogue to the irregular schools to which Goldthwaite referred. The osteopath and the chiropractor have flourished in direct proportion to the neglect of the procedures which they practice. As they raise the standard of their education, which is being done among the osteopaths, their theories become less fantastic. As they increase their requirements, they become more modest in their claims, and as a result there fall out from their ranks those who are unwilling to study or to work, and they form newer cults whose fancy is untrammelled by a knowledge of the facts. The remedy for this condition, the way in which we have got to combat it—and we have to fight it—is to teach the fundamental principles of manipulation, massage, and re-education to the medical student. And I am glad to say that school after school is recognizing this fact, and is introducing courses on the subject. It is now almost universal to prescribe massage for suitable cases, but unfortunately the doctor often dismisses the subject with his prescription. He does not very often realize the necessity of differentiating between kneading and the light stroking movement of effleurage for the relief of pain, the kind of movement that you will use over an irritated or inflamed part, in the neighborhood of a sprain or a fracture, the preliminary movement which is necessary in most cases of that kind. He does not realize the rapid exhaustion that comes to nerves from vibration over a sensitive nerve. He does not recognize the difference between such a movement and the deep kneading which goes under the name of petrissage, in which circulation is pushed along almost mechanically, and in which the deep tissues under the hand are moved and manipulated. He usually prescribes it in such general terms that the only thing necessary for the masseur or for the masseuse is to have physical strength and good will.

If we are to have a complete system of medical treatment this subject must be recognized and studied, and the only way that it can be recognized is by making it part of the education of the medical school.

During the war I had charge of one of these command depots that Goldthwaite spoke of, in

which we had some 5000 men who had been wounded, and we gave sometimes 400 or 500 treatments a day, stretching scars, and re-educating muscles after nerve sutures, and continually we had visiting physicians who, for the first time, began to realize that massage was not just rubbing, and that re-education was a part of medical treatment.

Let me say just one word about re-education. In a case of anterior poliomyelitis and a case of nerve suture, you very frequently find that there is no apparent movement under the ordinary tests. If, for example, you take an injury to the circumflex nerve, you ask the patient to raise his arm, he is unable to do so, and you may conclude that there is no return of action to the deltoid.

It is necessary to try more delicate tests than such a rough and ready one, and also to encourage the slightest beginning of a return of movement, and to nurse it along as a most precious symptom. For testing purposes very many devices have been used. A very good one is to place the limb in water and so to overcome the force of gravity, so that the slightest movement is visible. An ingenious device places the arm of the patient upon a very smooth level surface, so that it can be moved with the slightest possible friction. Another way that was designed during the war was to place the leg on a trolley, with ball-bearing wheels, so that the movement of abduction or adduction were possible with the slightest amount of physical effort. It is hard to realize the amount of encouragement that comes to a patient by the discovery of some slight improvement. It inspires him to know that a joint which last week was capable of movement throughout 30° can now move 35°. We are apt to overlook this psychological aspect. In addition to treating a patient, we are also treating a person, and we must use every way within our reach to increase the amount of interest taken by the patient. For that reason we use various devices with a sort of sporting interest. And I think it might interest you to know the principle upon which some of them are devised. A weight is raised by the muscular action of the muscles to be exercised. It runs up like a clock-weight, and each turn gives a click. The patient can find out if the amount of movement is improving by the number of clicks. The getting of the weight up to a certain point and then having it run down and hit the floor had a stimulating and dramatic effect upon the patient. It is very much the same principle that one sees at the fair, where you are handed a mallet, hit a post sending an indicator up a scale to a bell, and if you ring the bell you get your money back; an irresistible temptation to a good many.

From such simple appliances in which the muscular group is isolated, we go on to exercises that are in the form of games or occupations, and I remember very well a number of men with scars on the forearm with tendon involvement, so that it was impossible to completely close the hand. We gave them light boxing-gloves and a punching-bag, and let them work with them. It was extraordinary how quickly some of these patients regained the amount of movement desired. Their attention was diverted from pain to the hitting of the bag.

All the exercises should be put in the form of

games or occupations wherever possible. And it is only a step, of course, from the playing of games to the practicing of occupations. Various devices have been worked out for that purpose. One of the simplest and one of the most efficient was for cases where the grasp of the hand was weakened, and in which it was impossible for a patient to close his hand on a tool-handle. The device was to take a lump of wax, put it round the hammer-handle, and have the patient close his hand on it and then have it hardened. In this way he could use the tool, although he was not able to completely adapt his hand to the shape of the original handle.

These are some of the ways in which re-education can be practiced. We do not realize in medicine how much of our work must be re-education. The improvement of certain phases of speech defects like stammering and stuttering are purely questions of the re-education of the apparatus for breathing, phonation and articulation, and the treatment for ataxia is a question of re-education of powers that are lost.

If we will only pay the attention we should to the study of the physiological effects of physiotherapy, to the technique of manipulation, to the procedures of massage, and to this question of re-education, we will go far to establish, in its proper relationship, the kinship of physiotherapy to the general practice of medicine, and we will be able to show up in their true light those pseudo cults which have flourished so luxuriantly because of our neglect.

Present-day Problems in Regard to Gall-bladder Infections.—Sixty case records have been abstracted by Walter C. Alvarez, Karl F. Meyer, G. Y. Rusk, F. B. Taylor and Jessie Easton, San Francisco (Journal A. M. A., September 22, 1923), and their details charted for the study. In two cases the diagnosis was in doubt. Nineteen, or 33 per cent, of the remaining quite definite cases of cholecystitis were marked by the presence of stones. The first and most important factor in the diagnosis of early cholecystitis, the authors state, is a most careful and complete history. Pain was a common symptom, complained of by 95 per cent of the sufferers. Very helpful and characteristic also are the patients' statements to the effect that, although they have fine appetites and are hungry, they are afraid to eat. It does not make much difference when or what they eat. If they are due for an attack, they will get it even if they are living on tea and toast. Only one out of five had ever had anything like colic. Tenderness to the touch or soreness in the right side on jolting, jarring or reaching was often present, either as a constant symptom or as a transient one after acute exacerbations. It was complained of in 72 per cent of the cases. Very important also is the reverse peristalsis syndrome. Vomiting was a more or less prominent symptom in half of the cases. It may come only with severe attacks or with sick headaches. Regurgitation was noted in twenty-one cases. Acid regurgitation, "heartburn or acid stomach" was often a prominent symptom, and was noted thirty-six times. Nausea is not infrequent, and sometimes is the main source of annoyance. It was complained of thirty-two times. Belching is one of the earliest and most constant symptoms throughout the long course of the disease. Forty suffered with it. Thirty-nine complained of bloating, which was sometimes so severe that they would have to rush to their rooms and disrobe. Some of these persons get sallow with their "bilious spells," or they are

sallow most of the time. Actual jaundice is not a very common symptom even in stone carriers. A history of clay-colored stools can be obtained in only a few cases, and then it is of doubtful value. "Dopiness" is a not infrequent symptom (17 per cent), and often leads to the diagnosis of "auto-intoxication." It is sometimes associated with dizziness (noted in 33 per cent of the series) that is often severe enough to bring the patient to the physician. One of the surprises from these statistics is the great frequency with which constipation was encountered; i. e., in 60 per cent of the cases. Attacks of diarrhea were mentioned by a few of the patients (8 per cent). Hemorrhoids were encountered in at least one-third of the patients. Attacks of fever and chills are encountered mainly in the older patients with stones and phlegmonous cholecystitis. A history of typhoid fever was obtained in only seven of our cases. A history of pelvic disease, tumors, pus tubes, abortions or retroversion was obtained from 60 per cent of the women, and many had been operated on. One out of five had, or had had fibroids of the uterus. Arthritis was complained of more or less in seventeen cases (28 per cent), and its presence may therefore be suggestive diagnostically. Four women out of the series had had the right kidney stitched up, with more or less temporary relief. A history of nervousness, nervous breakdowns, and marked depression was obtained in half of the cases. In the examination, the most important finding is that of a tender liver edge. This was observed in forty cases. The gall-bladder could be palpated only in the severest cases in which a mucocele had developed following closure of the cystic duct. Fourteen had more or less heart trouble. Gastric stasis is unusual in cholecystitis, and, when present, it suggests some complication such as ulcer or appendicitis. The striking thing in these reports is the fact that a gall-bladder can remain almost unchanged after forty years of infection and stone formation. The mortality was low (1.7 per cent). Only one woman died as a result of the operation, and she had a complete volvulus of the bowel, made possible by a peculiar mesentery which had a very limited attachment to the spine. Seventeen are perfectly well or remarkably improved; eighteen are much better; eleven report some improvement, and three are apparently no better. At operation, the gall-bladders were often found to be thin-walled and normal in appearance; hence, in order to relieve the patient, the organ had to be removed on the strength of a good history, suggestive physical and Roentgen-ray findings, and the presence of large glands on the cystic duct, adhesions in this region and patches of perihepatitis. Remarkably few histologic changes were found in some gall-bladders which contained stones and which had given symptoms for forty years. Living bacteria were obtained from 82 per cent of the calculous, and from 57 per cent of the acalculous, gall-bladders. The infection was found most commonly in the wall, and the histologic changes were generally in the muscle and subserosa. The bile was often sterile (71 per cent), and normal in appearance.

Pericolic Membranes Simulating Carcinoma of the Colon.—Arthur Goetsch, Brooklyn (Journal A. M. A., September 29, 1923), has operated in two cases in which the clinical diagnosis of carcinoma of the ascending colon had been made. At operation, the true condition was found to be partial obstruction due to unusually peculiar vascular adhesions. Both clinically and by Roentgen-ray examination, they presented clinical syndromes similar to those of carcinoma of the colon. It is believed that the unusual vascular bands found in these cases were due to developmental defects that were capable, in themselves, of causing partial obstruction, with the clinical picture of carcinoma of the colon. Both patients have been under periodic observation. They have regained their normal weight and are generally free from their pre-operative complaints.

EDITORIALS

PRINCIPLES VERSUS METHODS IN HEALTH WORK

Those who study seriously the lines of development in public health cannot ignore the fact that much of the publicity focuses the attention of the public upon *methods* primarily and utilizes *principles* as talking points in support of the methods—good and bad. This is particularly true in the extensive field of better health for children. Of course, every person realizes the magnitude of this problem, and every right-minded person is wholeheartedly in favor of doing everything possible that is practicable toward improving the health not only of children, but of all other people. In so-called scientific literature, and particularly in more general literature, we are deluged with a great variety of different *methods* of improving child welfare, each one of which is considered to be fundamentally essential by its proponents. They usually do not say very much about the method; they simply announce it as an axiom and turn on the sob-story as an explanation of what will happen to the children if their particular pet method is not followed.

There was a time when the medical profession in its duties in preventing and treating disease was considered the most important factor in designating methods for the improvement of health. Today the tendency is to get further and further away from the physician, apparently because he is considered to be inadequately educated, too conservative and too selfish to permit his opinion to be of particular value in these movements. It is impossible to examine the literature of the subject at all critically without seeing very strong moving tendencies to break up public health betterment into several heads, in none of which is included the medical profession except in an incidental manner.

An examination of a recent volume on social welfare, published by the American Academy of Political Sciences, shows the tendency of one strong non-medical public health group and its earnest desire for leadership in this movement. In this book, containing some fifty or more articles by various types of "experts" in social welfare work, there are only a very few articles by doctors of medicine. The importance and responsibility of physicians in medical welfare work is mentioned only casually in this entire volume and, in many of the instances, in language that reflects discreditably upon the medical profession. This group undoubtedly would like to have a national department of social welfare, of which the medical profession would be a subordinate bureau. The educational authorities of the country are moving substantially in the same direction. Educational departments everywhere, including California, are active in building up subordinate medical departments upon somewhat the same basis that insurance companies and other great corporations employ in directing their medical departments. These medical departments in schools are, of course, under the control of non-medical

educators. An indication of the tendency in our own State is shown in an article by Walter M. Dickie, executive officer of the State Department of Health, published in the Weekly Bulletin of the California State Board of Health, January 27.

"The schools have provided a remarkable field for this public-health type of work, and boards of education throughout the State are not only starting new machinery for promoting the health of the school children, but they are also expanding and elaborating upon machinery that is already provided." . . .

"Nutritional problems, routine physical examinations, the teaching of personal hygiene, and similar factors, are, strictly speaking, within the province of the local educational authorities. The control of the communicable diseases, however, is absolutely and entirely within the province of health departments."

Another group that was particularly ambitious to control the public health field of this country, and incidentally to control physicians as subordinates of lay people in the public health field, is represented by organizations like the Red Cross and others of similar character. As an agency of war, for which it was designed, the Red Cross did serve, and undoubtedly would again serve, a valuable purpose, but if there is any place for it in our country in the every-day field of public health work during peace times, that fact constitutes a serious reflection upon the agencies charged by law with these duties.

The official health agencies as represented by national, state and local boards of health also are concerned in the development of a national public health department headed by physicians and operated by physicians. If such a department is to be created it should recognize public health as part of medicine, and the leaders and officers of the service should have a medical education. Many of the leaders of public health organizations appreciate this fact and are using every legitimate means to promote better public health by having public health bodies conducted by educated physicians. A considerable element among public health officials, however, apparently have felt that they were not strong enough to maintain control of their own field and they have formed various combinations with other non-medical, so-called health agencies, under one name or another, in the hope that by making such combinations they would win their point, even though they themselves thereby would take subordinate positions in the health work. These various combinations are changing ones—sometimes they are on, sometimes they are off. Recently a serious attempt was made to bring two of the largest of these elements together, believing that thereby they could establish at Washington a socio-political department to control the entire field of public health and medical welfare in this country. Fortunately for the people of the United States, the plan fell through—at least temporarily.

Broadly speaking, there are five major forces whose function includes public health that converge at Washington in a national way and in every state, county and city in a smaller way. Some of

these forces are so inclusive in their progress that the outriders and those toward the edges of the different forces get so mixed up that they have succeeded in spoiling a unified formation and impeding progress of any of them—at least temporarily. These forces are (1) organized education with all of its various contacts; (2) the official health agencies and medical departments of government; (3) the medical department of the Veterans' Bureau; (4) the welfare and social service group; and (5) the medical profession, including those engaged in preventing and in treating disease. A great many people, including some legislators, administrators and politicians, profess to believe that these great forces can be harmonized and brought together and made to function as one great service under a Cabinet officer. Many attempts have been made, and some are now being made, to bring this about, and it is not at all unlikely that a law to this effect may be passed during the next few years.

PROGRAM FOR 1924 STATE MEETING

All members who desire to present papers before the 1924 State meeting to be held at the Los Angeles Biltmore, Los Angeles, May 13, should communicate with the secretary of their respective section at the earliest possible date.

In the Directory of Medical Organizations of California, published on page 58 of the Journal, can be found the names of the present officers of all sections.

THREE LETTERS OF VITAL INTEREST TO MEMBERS

Letter No. 1

To All Members of the California Medical Association:

TERMINATION OF MEDICAL DEFENSE

MEDICAL DEFENSE TERMINATES JUNE 30, 1924
June 25, 1923.

Dear Doctor: At the meeting of the House of Delegates held June 23, 1923, the following resolution was adopted:

"Whereas, The House of Delegates at its regular annual meeting held at Yosemite, May 17, 1922, unanimously adopted a resolution directing the Council to make medical defense optional, the cost thereof to be met by separate assessment on the members desiring it; now, therefore be it

"Resolved, That medical defense be terminated as of June 30, 1924, and that the Council is hereby authorized to effect, if possible, a blanket defense policy arrangement with one or more insurance companies to be made optional for such members as desire such protection, and thereby retain for such members the services of the Society's legal staff; or, if such blanket policy plan is not found practicable, to arrange and submit to the membership a plan optional to each member to retain the Society's legal staff."

This means that any malpractice suit or threatened suit against you arising out of your professional services to any patient after June 30, 1924, will not be defended by the Society.

Please keep this letter on file for future reference. Yours very truly,

EMMA W. POPE, Secretary.

EWP:D

Letter No. 2

To All Members of the Indemnity Defense Fund:

INDEMNITY DEFENSE FUND DISCONTINUED

June 25, 1923.

Dear Doctor: At the meeting of the House of Delegates held June 23, 1923, the following resolution was adopted:

"Whereas, The Council, under instructions from the House of Delegates to present a plan to make medical defense optional, has conducted a canvass of the members of the Indemnity Defense Fund, being those members most interested in the subject of physicians' defense, in an effort to incorporate such Indemnity Defense Fund, but finds that such incorporation plan is not acceptable to a sufficient number of members to warrant further effort, and that it is not possible because of lack of support; now, therefore be it

"Resolved, That the Indemnity Defense Fund be discontinued as a Society undertaking at such time and upon such notice as the Council shall deem necessary for the best protection of its members, and the Council is hereby directed to accept no further memberships in the Indemnity Defense Fund."

This means, as far as you are individually concerned, that your coverage in the fund will continue until replaced by a "blanket policy" in which, should you desire, you will be included. When the fund has been finally discontinued, the balance will be returned to each subscriber as soon as practicable.

The accompanying letter (Letter No. 1) states that for you also, as a member of the Association, medical defense will terminate as of June 30, 1924.

The plan for incorporation of the fund, actively promoted by all those interested, including the Council, the officers of the Society, and its attorneys, has been found unacceptable to a sufficient number of members. No further action will be taken in this direction.

The Power of Attorney heretofore signed by you is returned herewith. Kindly acknowledge receipt of same. Any subscription you may have agreed to make to the proposed plan of incorporation is hereby canceled as of this date.

Under authority from the House of Delegates, the Council will now negotiate with all available carriers for a blanket policy for those who wish it. As soon as offers from insurance companies have been received, you will be notified. The premium rate under a blanket policy will be less than the regular premium rate, and those members going into this policy arrangement will be grouped by themselves. Yours very truly,

EMMA W. POPE, Secretary.

Enc.

EWP:D

Letter No. 3

Important

Read Carefully

FUND COVERAGE AND PROTECTION STOPS
NOVEMBER 30, 1923

September 24, 1923.

To All Members of the Indemnity Defense Fund:

Dear Doctor: The Council, at an adjourned meeting held in San Francisco, September 22, 1923, considered the propositions for a group defense policy submitted by insurance companies. It was the

unanimous opinion of the Council that none of the proposals were in such terms or offered conditions that would be acceptable to the membership; therefore, none of the offers were accepted.

The following preamble and resolutions were unanimously adopted:

"Whereas, The House of Delegates of the California Medical Association (formerly called the Medical Society of the State of California), at its last regular meeting held at San Francisco, California, June 23, 1923, by resolution unanimously adopted, resolved that the Indemnity Defense Fund be discontinued as a Society undertaking at such time and upon such notice as the Council should deem necessary for the best protection of its members; now, therefore, pursuant thereto and to the authority vested in the Council by the Administration Regulations and Coverage Rules of said Indemnity Defense Fund, it is hereby unanimously

"Resolved, That the benefit, protection, coverage and indemnity of the Indemnity Defense Fund shall not nor shall any part thereof extend to or cover any malpractice claim or case or suit or judgment, as defined by said Regulations and Rules, against any member of said fund, arising out of professional services or acts done by or on behalf of such member on or after December 1, 1923; and no member of said fund shall have or be entitled to or receive any benefit or protection or coverage or indemnity from said fund or any part thereof as to any such claim or case or suit or judgment against him so arising out of professional services rendered or acts done by him or on his behalf on or after December 1, 1923; and said Administration Regulations and Coverage Rules are hereby amended accordingly; and be it further hereby

"Resolved, That a copy of this resolution be forthwith sent to the trustees of the Indemnity Defense Fund and to each member of said fund at his address as shown by the Association's books and records by registered mail, and that the secretary of the Association in such registered letter direct the attention of each member to the necessity of securing a physician's indemnity policy with some insurance carrier, issued to him and effective not later than November 30, 1923; and that this resolution be published in the November issue of the Journal, and, if possible, in the October issue thereof."

This means, as far as you are concerned, that you will have no protection from the Indemnity Defense Fund in any malpractice threat, claim, case or suit which is based on anything occurring in your practice on or after December 1, 1923.

It will, therefore, be necessary for you to secure a policy with a commercial company, issued to you and in effect November 30, 1923.

Upon request, this office will furnish you with any information that you may desire or that may be helpful in this connection. Cordially yours,

EWP:D

EMMA W. POPE, Secretary.

PHYSICIANS AND LIFE INSURANCE

With assets of \$7,000,000,000, life insurance is the greatest business in the world, says O. F. Maxon, M. D. (Illinois Medical Journal). Not only is it the most gigantic from a financial standpoint, but in the number of people served and therefore interested. Physicians are vitally interested in, and are the most prominent of contributors to, the success of insurance. Some of this interest, according to Maxon, is shown by the fact that:

"In 1921 American Legal Reserve Companies

paid their medical examiners over \$8,000,000 in medical fees.

"The Metropolitan Life Insurance Company's nurses made 2,116,875 visits free of charge to its industrial policy-holders and 18,984 visits to persons insured under group policies."

Some two and one-half million medical examinations mean not only a vast amount of service and a large income to the medical profession, but it brings to them opportunities to serve people, and for conditions not covered by insurance policies. The interests of medicine and public health are closely associated with life insurance and the insurance companies are an all-powerful force in the future of medicine and the passing and enforcing of medical laws and policies.

EPINEPHRINE APNEA

The sympathomimetic action of epinephrine is undoubtedly the most prominent and important one possessed by this drug, but it is not the only one. Another striking action is the apnea, or stoppage of respiration, produced during the rise of blood pressure when the drug is injected intravenously. The cause of this respiratory inhibition has been variously attributed to the rise of blood pressure, vasoconstriction, anemia and to the direct action of epinephrine. The importance of seeking an explanation for the epinephrine apnea lies in obtaining a more complete knowledge of the drug's action, in determining definitely whether all of its actions are to be regarded as uniformly sympathetic in origin or not, and in reconciling the apnea with the theory of the emergency role of epinephrine and adrenals, which has been so much exploited during the past few years in this country.

The final analysis of a drug's action is frequently made on isolated structures or organs, but in the case of epinephrine apnea, perfusion experiments on the medulla have given variable and inconclusive results. As far as the intact organism is concerned, the evidences brought forward by Bouckaert* of the physiological laboratory of the University of Louvain seem conclusive and indicate that the apnea is due to a direct action of epinephrine. The experiments of Bouckaert also illustrate nicely the use of pharmacological methods in the analysis of physiological function. Making use of the well-known reversal of pressor (to depressor) action of epinephrine by ergotoxine, Bouckaert found that when cats and rabbits were injected previously with ergotoxine and then with epinephrine, the respiratory stoppage, or apnea, occurred in the usual way, without a rise of blood pressure. Under these conditions vasoconstriction was excluded, since the blood pressure tended to fall and ergotoxine paralyzed the vasoconstrictor nerves. The fall of blood pressure was variable and small and hence practically excluded anemia. Bouckaert concludes, therefore, that epinephrine possesses a direct action on certain structures, notably the respiratory center, besides its action on the sympathetic nerve endings. Just how the direct

*Bouckaert, J.—Arch. Néerland. de Physiol. de l'Homme, et des Animaux, 1922, 7:285, "Contribution à L'Etude de L'Influence de L'Adrenaline sur La Respiration."

inhibitory action of epinephrine on the respiration can be reconciled with the emergency theory is difficult to see. In fact, the apnea action might be used against this particular theory.

THE SOCIALIZATION OF MEDICINE

Whether the practice of medicine is to continue to be a private arrangement between the free physician and the free patient, the patient's freedom including his right of selection of his physician, or whether the State shall take the profession over and regulate medicine as it does education, continues to be an important question to physicians and patients. It has been for a long time a burning question among physicians in all countries. It is now receiving more and more attention from the public. Opinion divides almost exactly as it divides between the socialist and the individualist upon any other question.

Some socialists quite frankly admit that medicine and public health is their choice experimental ground. It is a good one from their standpoint for three particularly favorable reasons: Physicians are so loosely and unselfishly organized that it is easy to overcome their indefinite mass influence; the end results of sickness and death are easy to blame upon almost anything except the facts, and it is easy to get even medical assistance in propaganda by making a few of the members of the profession beneficiaries of the scheme.

Reports from countries that have broken down to an extent physicians' opposition and have been operating forms of State medicine for years are enough to make one, sincerely fond of his fellowman, wonder at what a people will stand for in the name of government. "State Medicine" is touched upon in some way in most issues of most medical journals, but the problem rarely is so truthfully and clearly stated as was done by Frederick C. Warnshuis, speaker of the House of Delegates of the A. M. A., in his report at the seventy-fourth annual meeting. Among other things, the speaker said (Journal A. M. A., July 7, 1923):

"State medicine" was defined by this House during our last session. That definition is clear and conclusive. I assume that the formulation and adoption of that defining statement was for the purpose of establishing a policy and a principle for the guidance of our State and county units. I assume, further, that activity, on the part of members individually, collectively or as public officials, would be subject to the jurisdiction of component units of which they are members when the provision of that resolution was violated. The events of the past year, in many States and localities, are indicative that but little, if any, consideration has been given to the policy enunciated. It is apparent that certain members assume that they and their associates are neither amenable nor subservient to the acts of this body; that they are self-sufficient and supreme unto themselves.

"If we are to endure, if we are to be more than word formulators, if we are to exercise full organizational prestige and influence, then it becomes imperative that every member of this association be made to realize that our policies are not idle

compositions or visionary speculations. To remain affiliated with this national body, it must be impressed on those who comprise its membership that such membership entails the willingness to keep inviolate the laws and rules that govern our federation. I therefore deem it advisable that you direct that a compilation of the policies of this association be promptly undertaken by the secretary; that this compilation shall plainly set forth the position that State and county units shall assume in meeting the problems of public health movements and in particular to the activity of group clinics, community and hospital clinics, national and State health clinics, health boards and health officers; that this compilation shall conclude with the statement that any action controversial to the announced policies of this association, either by individuals, groups or component units, shall be submitted to review by State councils and our Judicial Council, and subjected to such action as these respective bodies may deem advisable. Further, that our secretary be instructed to cause the distribution of such compilation to be accompanied by a letter directed to State and county officials conveying the recommendation of this House that they take requisite action that will obtain a general observance of the policies enunciated by this body.

"I distinctly wish it understood that I do not criticize efforts directed to strictly public health measures. These have our unqualified support. But when that purpose is used as an excuse to justify the institution of socialized medicine for all classes of society, and in so doing condemnation and ridicule are directed to the profession as a whole, as well as to individuals, we emphatically declare that the time has come to call a halt and that they who thus conduct themselves shall be called to account; that their right to continue as members of this organization shall be inquired into, and if the facts reveal that they are unworthy, that their membership shall be promptly terminated."

ANNUAL HOSPITAL CONFERENCE

The third annual conference of the Hospitals of California, held at San Francisco, October 18, 19 and 20 was, as one of the metropolitan dailies stated, "a constructive demonstration of the practical value of the hospital betterment work of the League for the Conservation of Public Health." The importance of the meeting is indicated in the vital subjects discussed and the prominent speakers who discussed them.

Among the outstanding features of the splendid program were the following addresses: "The Duties and Responsibilities of the A. M. A. in Hospital Betterment," by Dr. Ray Lyman Wilbur, president of the American Medical Association; "The California Medical Association and Hospital Betterment," by Dr. T. C. Edwards, president California Medical Association; "Hospital Betterment in California," by Dr. John H. Graves, past president California Medical Association and of the League.

The subject, "How May Hospital Care Be Furnished Most Economically, Adequately, and Efficiently to Those Who Cannot Afford to Pay the

Full Cost of Such Service," was presented by Dr. George B. Somers, director Lane and Stanford University Hospitals, as "one of the biggest problems concerned with the conservation of public health." This subject stimulated the liveliest debate and received the widest publicity. The discussion of this perplexing medical and economic problem developed so many different angles and showed such a wide diversity of opinions and plans that the conference, by unanimous resolution, requested the League for the Conservation of Public Health to investigate the question thoroughly, accumulate all available data, and suggested solutions and present them in comprehensive form to the 1924 Hospital Conference.

"Group Nursing"; "The Best Methods of Articulating the Hospital With Its Various Legitimate Contacts, Pathology, Clinical Laboratories, Radiology, Nursing, Dental, and other Departments"; "Medical Social Service in Its Relation to the Patient and Hospital"; "Significant Progress in Nursing Education"; Hospital Administration, Including Methods of Accounting, Reports, Methods of Admission, Classification and Discharge of Patients, were other timely topics handled by able speakers.

A symposium on "The Narcotic Problem in California" under the combined auspices of the Hospital Betterment Bureau of the League for the Conservation of Public Health, the City Federation of Women's Clubs, and the California Medical Association, brought out many constructive suggestions on what California should do through legislation, administration and police activities, medical prevention and treatment and education to improve the narcotic situation in our State. Among the speakers that discussed the narcotic problem from their various viewpoints were Hon. Samuel M. Shortridge, Senator from California; Very Rev. Charles A. Ramm, Regent of University of California; Louise B. Deal, M. D., chairman Anti-Narcotic Committee; Duncan Matheson, Captain of Detectives, San Francisco Police Department; Mrs. D. E. F. Easton, president City Federation of Women's Clubs, and Dr. Dudley Smith, president League for the Conservation of Public Health.

The conference by unanimous resolution sent "a message of loving friendship, appreciation and cheer to Dr. W. E. Musgrave, whose devoted, unstinted and efficient efforts, as chairman of the Hospital Betterment Bureau of the League, have been a source of inspiration to all worthy hospitals of California."

The meeting was thoroughly representative and constructive. The hospitals of California, which are constantly improving their service and keeping abreast of the hospital betterment movement, participated in the conference.

Typhus Fever in Southern California—L. M. Powers, Los Angeles (Journal A. M. A., October 6, 1923), calls attention to the danger of typhus fever becoming endemic in the southwestern portion of the United States, and urges the local authorities to action in preventing such a condition. There have been reported to the State Board of Health twenty-eight cases since the spring of 1916. Of these, twenty occurred in Southern California.

STATE SOCIETY

ABSTRACTS FROM THE MINUTES OF THE 141ST MEETING OF THE COUNCIL OF THE CALIFORNIA MEDICAL ASSOCIATION.

Adjourned meeting held in San Francisco, Saturday, September 22, 1923, at 10 o'clock a. m.

The complete minutes of this and all other Council meetings are on file in the office of the State Society and are open to any member of the society.

Present—Doctors Edwards, Parkinson, De Lappe, McLeod, Stover, Hamlin, Ewer, Kiger, Strietmann, Saxton Pope, Emma W. Pope, General Counsel Peart and Assistant General Counsel Morrow.

Absent—Doctors MacGowan, Beattie, Coffey, Curtiss, Bine, Carrington, McArthur and Kress.

Illness of Editor—Saxton Pope reported on the illness and present condition of the editor, William E. Musgrave, stating that he believed he had every chance for a recovery.

Action by the Council—On motion of Kiger, seconded by McLeod, the following resolution was adopted:

Whereas, the Council having heard from Saxton T. Pope, M. D., as to the condition of our editor at this date.

Resolved, That it desires to express its sincere sympathy with Doctor Musgrave and his family in his present illness; and that every member trusts his favorable condition indicates further improvement and an ultimate resumption of his work.

Blanket Physicians' Defense Policy—The general counsel then reported on the bids submitted by various insurance companies. These bids were then read and discussed by the general counsel, assistant general counsel and members of the Council.

Action by the Council—Upon motion of Saxton Pope, seconded by De Lappe, it was unanimously

Resolved, That the group defense policy propositions submitted by the Aetna Life Insurance Company, Georgia Casualty Company, Hartford Accident & Indemnity Company and the U. S. Fidelity & Guaranty Company, at the request of this Society be not accepted, it being the sense of the Council that none of the proposals made is upon such terms or conditions as would be acceptable to the membership or satisfactory and practicable of operation; and be it further

Resolved, That the secretary advise each of said companies accordingly.

Termination of Indemnity Defense Fund—The question of the termination of the Indemnity Defense Fund was then discussed, and the general attorney and the assistant general attorney presented the resolution next herein set forth. After full discussion by the attorneys and members of the Council, upon motion of De Lappe, seconded by Hamlin, the resolution was unanimously adopted:

Whereas, The House of Delegates of the California Medical Association (formerly called the Medical Society of the State of California) at its last regular meeting held at San Francisco, California, June 23, 1923, by resolution unanimously adopted, resolved that the Indemnity Defense Fund be discontinued as a society undertaking at such time and upon such notice as the Council should deem necessary for the best protection of its members; now, therefore, pursuant thereto and to the authority vested in the Council by the administration regulations and coverage rules of said Indemnity Defense Fund, it is hereby unanimously

Resolved, That the benefit, protection, coverage and indemnity of the Indemnity Defense Fund shall not nor shall any part thereof extend to or cover any malpractice claim or case or suit or

judgment, as defined by said regulations and rules, against any member of said fund, arising out of professional services or acts done by or on behalf of such member on or after December 1, 1923; and no member of said fund shall have or be entitled to or receive any benefit or protection or coverage or indemnity from said fund or any part thereof as to any such claim or case or suit or judgment against him so arising out of professional services rendered or acts done by him or on his behalf on or after December 1, 1923; and said Administration Regulations and Coverage Rules are hereby amended accordingly; and be it further hereby

Resolved, That a copy of this resolution be forthwith sent to the trustees of the Indemnity Defense Fund and to each member of said fund at his address as shown by the Association's books and records by registered mail; and that the secretary of the Association in such registered letter direct the attention of each member to the necessity of securing a physician's indemnity policy with some insurance carrier issued to him and effective not later than November 30, 1923; and that this resolution be published in the November issue of the Journal, and if possible, the October issue thereof.

Notice of Termination of Fund—The question of notifying all members of the Fund of the termination of such Fund was considered. It was the sense of the Council that the chairman and the general counsel prepare such a notice to be sent by the secretary to all members of the Fund as provided by the resolution.

Optional Medical Defense—The question of formulating a plan whereby members of the Association can secure Society medical defense if they so desire was considered.

Action by the Council—Upon motion of Kiger, seconded by De Lappe, it was unanimously

Resolved, That the general counsel and assistant general counsel be instructed to prepare and submit to the executive committee at a subsequent meeting an outline of the proposed optional medical defense.

Date of 1924 Meeting—Upon motion of Hamlin, seconded by Ewer, it was unanimously

Resolved, That the opening date of the next annual meeting of the California Medical Association be fixed for Tuesday, May 13, 1924.

Hotel and Convention Headquarters for 1924 Meeting—The secretary then presented invitations from the Los Angeles Biltmore, Hotel Alexandria and The Ambassador to hold the 1924 meeting in their hotels. After discussion, upon motion of Kiger, seconded by De Lappe, it was unanimously

Resolved, That the invitation of the Los Angeles Biltmore as submitted under date of September 19, 1923, to hold the 1924 meeting in that hotel be accepted; and that the Los Angeles Biltmore be made hotel and convention headquarters for the 1924 meeting of the California Medical Association.

Committee on Arrangements—The president advised the Council that he had appointed Doctor Kiger, chairman, and Doctors McArthur and Shoemaker, all of Los Angeles, members of the Committee on Arrangements for the 1924 meeting of the Association.

Discontinuance of Certain New Sections—The secretary then brought up the question of discontinuing certain new sections as raised by the Applied Biology Section (Alfred C. Reed, chairman) and the Physiology, Chemistry and Pharmacology Section (Walter C. Alvarez, chairman). Letters from these two sections were read for the information of the Council.

Action by the Council—Upon motion of Stover, seconded by De Lappe, it was

Resolved, That the Applied Biology Section and the Physiology, Chemistry and Pharmacology Sec-

tion of the California Medical Association be discontinued.

Industrial Medicine—The chairman of the Council reported that he had been unable to secure a report from the Industrial Accident Section of the Association on the appointment of a committee by his section or the proposed activities of such committee as requested by that section at the annual meeting. It was the sense of the Council that the matter be deferred until the next meeting of the Council.

Question of Dividing the United States into Territorial Districts—The secretary reported that she had been unable to secure a report from Doctor Paterson, chairman of this committee. It was the sense of the Council that the secretary be instructed to again write Doctor Paterson, and that the matter be deferred to the next meeting of the Council.

Bunnell Memorial—The president advised the Council that he had appointed Egerton Crispin of Los Angeles, secretary of the Southern California Medical Association, the third member of the Committee on the Bunnell Memorial. The other members of this committee are Emmet Rixford, chairman, and Saxton T. Pope, both of San Francisco.

Graduate Instruction for Physicians in General Practice—Edwin I. Bartlett, chairman of the Committee on Graduate Instruction for Physicians in General Practice, presented the views of his committee on the subject of graduate instruction for physicians in general practice. The matter was fully discussed, and Doctor McLeod stated that he felt this was the best way to secure new members for the Association, and that, if the hospitals in San Francisco and Los Angeles could arrange schedules giving the time and classes of work to be done, much could be accomplished in keeping the country doctors in touch with modern medicine and surgery.

It was the sense of the Council that the matter be continued until the next meeting of the Council, at which time Doctor Bartlett should make a further report.

The Value of Forcing Fluid in the Treatment of Mercuric Chlorid Poisoning—Having determined that 15 mg. of mercuric chlorid per kilogram of weight was the fatal dose for dogs, Charles C. Haskell, J. R. Carder and R. S. Coffindaffer, Richmond, Va. (Journal A. M. A., August 11, 1923), attempted to ascertain whether dogs could be saved after this dose. The mercury was given to the treated dogs in the same manner as to the controls. After allowing from thirty minutes to a little more than two hours to elapse, they gave the dogs an injection, into the jugular vein, of 25 cc. of an 0.8 per cent saline solution per kilogram of body weight; this was followed by injection of a similar amount either subcutaneously or intraperitoneally. The animals were kept in metabolism cages, and intraperitoneal injection of 50 cc. of salt solution per kilogram of body weight was repeated daily for varying lengths of time, until death or apparent recovery. If the dog was in good condition after one month, it was considered as having "survived." It was evident that a definitely favorable influence is exerted by the use of large amounts of physiologic sodium chlorid solution in dogs poisoned by mercuric chlorid. Thus, of the twenty-five dogs receiving the fatal dose of 20 mg. of mercuric chlorid per kilogram of body weight, and subsequently treated by intravenous subcutaneous and intraperitoneal injections of large amounts of saline solution, twenty survived. So far as experiments justify conclusions, it seems permissible to the authors to state that the intravenous injection of salt solutions comparatively soon after oral ingestion of mercuric chlorid possesses a definitely beneficial action and effects the recovery of animals that have received what is probably the surely fatal dose for untreated dogs.

GRADUATE INSTRUCTION FOR PHYSICIANS IN GENERAL PRACTICE

It was the sense of the council at the adjourned meeting held in San Francisco September 22, 1923, that letters be sent to the University of California Hospital, Stanford University Hospital, White Memorial Hospital, and the accredited hospitals of California asking for their co-operation in furnishing graduate instruction for physicians in general practice.

William Ophuls, dean of the Stanford University Hospital, 2398 Sacramento street, San Francisco, responds:

"I am able to tell you that we shall be very glad to co-operate with the State Medical Society in an effort to facilitate the graduate instruction for physicians in general practice. Ever since the organization of the Stanford University Medical School, we have offered properly qualified physicians the opportunity to do work in our clinics and laboratories as special workers, and since last summer we have been encouraging physicians to take such special work during the summer months; that is, in July, August, and September. The opportunities which we offer are largely for practical work without much theoretical instruction. Our library offers unusual opportunities, however, for study along theoretical lines.

We are also maintaining the so-called 'Colloquia,' which, in fact, are clinical demonstrations in the San Francisco Hospital. They were started by the San Francisco Polyclinic, and have been taken over by us. The Surgical Colloquium occurs on Thursday mornings at 9 o'clock, and the Medical Colloquium on Friday mornings at 10 o'clock. The programs for these Colloquia are posted in the Lane Medical Library and in the library of the County Medical Society. Any physician may have these programs sent regularly, by application to the dean's office at our Medical School.

At the Medical School we have mid-day clinics, as follows: Mondays at 11:30, Clinico-Pathological Demonstrations; Wednesdays at 11:30, Clinics in General Medicine; Saturdays at 11:30, Clinics in Obstetrics and Gynecology.

The following is a schedule of the clinic operating days and hours at the Stanford Hospital. Members of the State Medical Society are cordially invited to attend these operative clinics:

Mornings—Monday, Genito-Urinary, 8:30-12 (Class, 10); Tuesday, Surgical, 8-12; Wednesday, Gynecology, 8:30; Thursday, Surgical, 8:30-12 (Class, 11-12); Friday Genito-Urinary, 8:30-12 (Orthopedic Class, 10-12); Saturday, Surgical, 8:30-12 (Class, 11).

Afternoons—Monday, Orthopedic, 2; Nose and Throat, 1:30. Tuesday, Gynecology, 1:30; Surgical, 1:30. Wednesday, Eye, 1:30; Nose and Throat, 1:30. Thursday, Surgical, 1:30. Friday, Gynecology, 1:30. Saturday, Surgical, 1:30.

The following are the heads of the various clinic departments. The operations are, of course, frequently performed by their assistants: Surgical, Stanley Stillman; Obstetrics and Gynecology, Alfred B. Spalding; Ear, Nose, and Throat, Edward C. Sewall; Eye, Albert B. McKee; Genito-Urinary, Rufus L. Rigdon, Orthopedic, Leonard W. Ely."

L. S. Schmitt, acting dean of the University of California Hospital, Parnassus and Third avenues, San Francisco, writes as follows:

"I am advising you of the activities at the University of California Hospital open to visiting doctors.

Medicine—Ward rounds (daily), 10 a. m. to 12 m.; general staff rounds, Wednesdays, 10 a. m. to 12 m.; amphitheater clinics, Saturdays, 10 a. m. to 11 a. m.; clinical pathological conference, Saturdays, 11 a. m. to 12 m.; out-patient clinics, daily; health center (periodic examination of apparently healthy persons), Tuesdays and Thursdays, 10 a. m. to 4 p. m.

Surgery—Operative surgery. Physicians interested may telephone to supervisor of operating-room, Sunset 3600, for information concerning schedule. Ward rounds, Thursdays, 10:30 a. m. to 12 m.; amphitheater clinic, Saturdays, 9 a. m. to 10 a. m.; clinical pathological conference, Saturdays, 11 a. m. to 12 m.; out-patient clinics, daily.

Pediatrics—Ward rounds (daily), 9 a. m. to 10 a. m.; general staff rounds, Fridays, 9:30 a. m. to 11:30 a. m.; out-patient clinics (daily), mornings; asthma clinic, Mondays, Wednesdays, and Fridays, afternoons; well-baby clinic—periodic examination of apparently healthy babies. Clinic, Mondays and Wednesdays, 2 p. m. to 4 p. m.

Obstetrics and Gynecology—Operative gynecology. Physicians interested may telephone to supervisor of operating-room, Sunset 3600, for information concerning schedule. Ward rounds, Mondays and Fridays, 9 a. m. to 10 a. m."

Percy T. Magan, dean, assures us that the White Memorial Hospital (North Boyle and Michigan avenues, Los Angeles) is "more than glad to receive visiting physicians, and to co-operate in every way in this good work." The following is a schedule of their surgical hours:

Sunday—8-10, tonsillectomies; 10-12, tonsillectomies.

Monday—8-10, surgery clinic; 10-12, surgery clinic; 11:30-12:30, surgical clinical lecture.

Tuesday—8-10, tonsillectomies; 10-12, tonsillectomies.

From the following accredited hospitals, letters have been received stating their willingness to have visiting physicians at operations, and to furnish telephonic schedules of the day's work upon request. To this list will probably be added other hospitals still having this matter under advisement.

Los Angeles County—Children's Hospital, Sunset Boulevard and Vermont Avenue, Los Angeles; Los Angeles General Hospital, 1100 Mission Road, Los Angeles.

San Francisco County—French Hospital, Geary street and Fifth avenue, San Francisco; Mary's Help Hospital, 145 Guerrero street, San Francisco; Southern Pacific Hospital, Fell and Baker streets, San Francisco (limited accommodations); St. Luke's Hospital, Twenty-seventh and Valencia streets, San Francisco.

Alameda County—Livermore Sanitarium, Livermore; Samuel Merritt Hospital, Hawthorne and Webster streets, Oakland.

San Diego County—St. Joseph's Hospital, Sixth street and University avenue, San Diego.

Mental Retardation and Ductless Gland Disease—Cases of mental retardation in which outspoken ductless gland disorders could also be detected are recorded by Hans Lisser and Charles E. Nixon, San Francisco (Journal A. M. A., October 6, 1923). The mental retardation was definite in all, and the endocrine disturbances were likewise obvious. It is indicated by the authors that a glandular origin for the mental retardation must remain for the present an unproved theory. It is noted, however, that thyroid feeding definitely advances the intelligence of mentally defective subjects of congenital myxedema. When pituitary extracts of similar potency are available, comparable results may be achieved in mental defectives, the subjects of dyspituitarism. Since the proof of such a contention hinges on mental improvement by appropriate organotherapy, it is stated that considerable experience with pituitary preparations now available has resulted in suggestive and encouraging results in a few instances, but not sufficiently striking or consistent to prove the foregoing hypothesis at present.

COUNTY NEWS

One of our county secretaries has sent out the following call for a meeting. It is published at the head of this column because it might well be applied to every society and every individual member:

"Organized Medicine represents the backbone of the ethical medical profession.

Our County medical societies constitute the backbone of organized medicine.

Each Member of the county societies should help to constitute the backbone of his society.

The member whose interest is lacking in the welfare of his society is not protecting his own interests, nor is he showing the proper attitude toward the profession to which he belongs.

A Chain is Only as Strong as Its Weakest Link

Each member of our society represents a link in this professional chain. Let us make the Stanislaus County Medical Society "the strongest," even if not the longest, chain in California.

We Can Do It, If You and I Do Our Part

The greatest evidence of willingness is attendance. Let the man who expects organized medicine to protect him in time of need contribute to the life of his society, by his attendance.

Let us make the following year the best year our society has yet enjoyed.

We Can Do It—With Your Help

Last year brought several excellent men to us with valuable papers. The programs for the ensuing year will be even better.

A Definite Resolution

"I will attend every meeting of my society this year"—will do it."

BUTTE COUNTY

Butte County Medical Society (reported by J. O. Chiapella, secretary)—The society met on September 20 at the office of Dr. Chiapella, with the following members present: Baumeister, Browning, Hamilton, Schell, Stansbury, Gatchell, Moulton, Johnson, Poole, Enloe, Chiapella. The meeting was for the purpose of an address by N. T. Enloe on his proposed new \$750,000 hospital and to give the physicians of Chico and vicinity an opportunity to endorse the project. Following Enloe's clear and logical expression of his ideas, a motion to fully endorse his project met with unanimous approval of the society.

CONTRA COSTA COUNTY

Contra Costa County Medical Society (reported by L. St. John Hely, secretary)—The Contra Costa County Medical Society met in regular monthly session September 29 at the residence of J. T. Breneman at El Cerrito.

Discussions were held in reference to educating the general public in regard to scientific medicine. The subject was introduced by Hely, stating that the public were not to be blamed for patronizing the cults, as they did not know the difference between scientific medicine and quacks and had no way of knowing, it being brought out that students in the grammar school and the high schools were not even studying common school physiology at the present time. This used to be the sheet anchor of the layman, but, as stated, the man growing up at present knows little about the human or animal body and, of course, has no way to judge. It was suggested that speakers should be lecturing regularly in the churches and in the schools. Emmett Rixford led the discussion.

The paper of the evening—we may say the lecture—was given by Emmett Rixford, and to say that it was a lecture and a complete one would be to state it mildly. The doctor brought out many essential points in the operation of gastric ulcer that makes between success and failure. His wide experience has made his lectures very valuable, and the society wishes to have him lecture again in the future, and is very grateful to him for making the trip. The following members were present and enjoyed the hospitality of Breneman:

U. S. Abbott, C. R. Blake, George M. Bumgarner, John Beard, J. T. Breneman, P. C. Campbell, F. S. Cook, H. L. Carpenter, W. E. Cunningham, C. L. Gregory, L. St. John Hely, Denninger-Keser, E. C. Love, W. S. Lucas, J. B. Spalding, Clara Spalding, S. H. Marks, Hall Vestal, Lloyd A. Clary, C. L. Ianne, T. Lisle Horne, J. Emmett Clark; Miss Agnes Driscoll, Miss Yaub, Cottage Hospital, Richmond; Mrs. Elizabeth Redmond, R. N.

MERCED COUNTY

Merced County Society (reported by Brett Davis, secretary Merced County Medical Society)—The medical society has not held any meetings during the summer.

Mercy Hospital—The new community hospital at Merced is just about completed, and equipment is arriving. It should be in operation very soon.

MONTEREY COUNTY

Monterey County Medical Society (reported by T. C. Edwards, secretary)—The society met on October 5 at El Adobe Hospital, Monterey. There was no regular program, and the evening was spent discussing matters of general interest.

A resolution was passed instructing the secretary to give the local newspapers a copy of the resolutions passed by the A. M. A., calling attention to the unethical conduct of members of the profession prescribing alcohol illegally, and urging county societies to discipline members who are thus debauching their profession.

D. Brumwell, who has been at Indio looking after his date interests, has returned to his home in King City.

SAN BERNARDINO COUNTY

San Bernardino County Medical Society (reported by E. J. Eytinge, secretary)—The society met on October 2 at the County Hospital, with thirty-seven members present, forty-three absent, and twenty guests. Dinner was served.

The program consisted of an address by the retiring president, Frank Folkins, on "Roentgenological Impressions of an Eastern Trip," and a paper by E. H. Hummell on "Eye Symptoms in Neurologic Practice."

The following officers have been elected for this year: President, J. H. Evans, Highland; first vice-president, E. L. Tisinger, San Bernardino; second vice-president, A. T. Gage, Redlands; secretary-treasurer, E. J. Eytinge, Redlands.

H. W. Vollmer of Loma Linda was transferred to Los Angeles County and J. S. Reekie of Ontario was transferred to Riverside County.

SAN DIEGO COUNTY

San Diego County Society (reported by Robert Pollock)—During September the county society enjoyed three clinical programs—one at each of the staff hospitals, San Diego County General, St. Joseph's, and Paradise Valley. In each case members of the hospital staff presented and discussed some very interesting clinical material. The program at the County General included (1) a group of children presented by Thornton, (2) a fracture of the twelfth dorsal vertebra without nerve injury pre-

sented by Harding, (3) a right hemiplegia following a fractured skull presented by Little, and two extensive superficial carcinomas presented by Wicherski. The clinical night at St. Joseph's Hospital developed into a symposium on anesthesia participated in by a large number of the staff. The evening spent at Paradise Valley Sanitarium commenced with an excellent dinner, served by the management, which was followed by a tour of the new 100-bed addition to the hospital, after which the following program was presented: (1) Case of Madura foot presented by Warren of the staff; (2) Case of atrophic arthritis presented by Falkner; (3) Case of chronic endarteritis obliterans presented by Butterfield. These cases were liberally discussed by members of the society present.

October 9, in the society's regular meeting place, Science Hall, B. J. O'Neill gave a talk on his observations of the European surgical clinics visited by him.

SAN FRANCISCO COUNTY

San Francisco County Medical Society (reported by J. H. Woolsey, secretary)—During the month of September, 1923, the following meetings were held:

Tuesday, September 11—General Meeting. (1) The California Pandemics of the 1820s and 1830s, Edward W. Twitchell; (2) Shakespeare as an idealist in the practice of medicine, C. H. Arnold; (3) Some phases of medical history, W. C. Alvarez.

Tuesday, September 18—Committee on Surgery. (1) Mistakes in general surgery, A. S. Keenan; (2) Tuberculous peritonitis, A. J. Lartigau; (3) A device for temporary control of certain intestinal fistulae, Francis Williams.

Tuesday, September 25—Committee on Eye, Ear, Nose, and Throat. (1) Demonstration of cases; (2) Discussion of lateral sinus thrombosis with report of cases, Arthur Collis Gibson; (3) Report of cases of marked visual defects in drivers of automobiles. Discussion tending toward proper legislation, Walter Scott Franklin.

University of California Medical Society Meeting (reported by William J. Kerr, secretary)—At the September meeting of the University of California Medical Society three papers were presented. E. L. Bruck, L. W. Skelton, C. M. Pearce presented a case of coccidioides and discussed the differential diagnosis of this condition from other granulomata. It was shown that the disease is almost entirely limited to the valley regions of California, and that the diagnosis is usually easily made from an examination of the discharges from the sinuses or wherever exudate may be obtained. The high mortality was emphasized, and the need of more specific therapeutic measures was suggested. The patient under discussion was shown to be greatly improved after the use of vaccine prepared from the organism.

W. C. Alvarez gave a lantern-slide demonstration of illustrations from medical history showing the progress of various branches of medicine.

E. L. Walker discussed the chemotherapy of bacterial infection, emphasizing the great value of chemotherapy, especially in the protozoan diseases, and spoke of the progress that had been made in developing chemical substances for the control of bacterial infections. He mentioned the brilliant results that had been obtained by certain chemicals in the destruction of bacteria in the test-tube which have not been attended with great success when applied clinically, but felt that by approaching the problem from the standpoint of organic chemistry, by the preparation of a large number of chemical substances of non-bactericidal properties certain suggestions would be obtained for further investigation.

The November meeting of the society will be held on Thursday, November 22, at 8 p. m., in Toland Hall, in the University of California Hospital. The medical profession is invited to attend.

St. Luke's Hospital Clinical Club Meeting—St.

Luke's Hospital Clinical Club resumed its regular meetings after the summer vacation on Tuesday, October 2, with a paper and case report by J. Marion Read on Roentgen-Ray Therapy in Thyrotoxicosis—Its value as measured by the basal metabolic rate. Read reported fifty cases which had been under observation in St. Luke's Hospital, showing charts and lantern-slides. He compared the result following X-ray therapy, surgery, and expectant treatment.

These meetings are held on the first and third Tuesdays of each month in the assembly room of the Clinic building, following a buffet luncheon. Subjects for subsequent meetings are:

November 6—Blood Transfusion.

November 20—Deep Therapy and X-Ray.

December 4—Cardiac Neuroses.

December 18—Discussion of Pan-Sinusitis and Suggestions for Treatment.

San Francisco doctors and out-of-town men interested in graduate work will be welcome at any of the Clinical Club meetings.

Mount Zion Hospital Notes (from surgical service of C. G. Levison)—Incision for appendectomy in relation to the most marked area of tenderness. During the past two months there have been several cases of appendicitis with a noteworthy sign—pain and tenderness in the right lower quadrant, but the most marked area of tenderness at, or just above, the umbilicus. This was taken into consideration in each case, and a right rectus incision made with its midpoint at the level of the umbilicus, corresponding to the most marked area of tenderness. In all cases the appendix was found high up in the abdomen at about the level of the umbilicus, and the operation was carried out with comparative ease as to what it might have been if the usual low right rectus incision had been made. Levison has previously called attention to the advantage of making the incision for appendectomy correspond to the area of greatest tenderness, in an article appearing in the *Journal of the A. M. A.*, July 21, 1908, entitled "Lumbar Appendectomy."

St. Joseph's Hospital Staff Meetings—The staff of St. Joseph's Hospital held an interesting meeting on October 10. Harold Wright of the Section on Neuropsychiatry spoke on "Neurocirculatory Asthenia," and Paul Castelhun on "Modern Treatment of Appendicitis." Alex Keenan opened the discussion on the similarity of the first subject with functional heart disease and the advantages of the Ochsner treatment. Cases were presented by Sherman Tuttle (appendicitis, with hemorrhagic complication and cholelithiasis), A. S. Musante (carcinoma of the uterus and bowels), H. A. Deering and C. E. Smith (cholecholelithiasis and cholemia).

The program announced for November 14 includes "Survey of Our Hospital Records, Picked at Random," by Dr. William Quinn; and "Value of Private Case Records; Types," by Philip King Brown.

SAN MATEO COUNTY

San Mateo County Medical Society (reported by William Otis Callaway, secretary)—The society met on September 26 at the Mills Memorial Hospital, San Mateo, with sixteen members present, seven absent, two visitors, and two new members. The program consisted of a talk with radiograms on "X-ray and Appendicitis (Chronic)," by M. P. Burnham of San Francisco, followed by discussion by members of the society.

J. G. Null, Redwood City, and M. D. Lessard, South San Francisco, were admitted to membership.

San Mateo County Community Hospital at Beresford was opened September 10. The new hospital is constructed to accommodate one hundred or more beds, and additional facilities will be added as needed, under present plans. Wood C. Baker of San Mateo is medical superintendent of the hospital. The old County Farm will be operated solely for

those needing a home, and all patients have been removed to the new institution.

SANTA BARBARA COUNTY

Santa Barbara County Medical Society (reported by A. C. Soper Jr., secretary)—The meeting of October 8 was called to order at 8:15 p. m. at Cottage Hospital, President Means in the chair. There were present fourteen members, three internes, Varick of Manchester, N. H.; and Carl W. Rand of Los Angeles.

A case of molluscum epitheliale was exhibited by Luton and Ullman; eighteen year old girl, lesions existed since early childhood; improving under sulphur ointment and occasional fulguration.

Carl W. Rand of Los Angeles presented the topic of "Some Phases of Spinal Cord Tumors," illustrated with charts of nerve symptoms, X-ray pictures, and pathological slides—all by lantern-slides. Ten cases were described. Discussion participated in by Robinson, Hotchkiss, Stevens, Rexwald Brown, Ullman, and Nuzum.

Correspondence from A. M. A., State Headquarters, Cottage Hospital, National Tuberculosis Association, California Tuberculosis Association, Gorgas Memorial Fund, Surgical Film Co., Lowy Medical Film Corporation, and various individuals was read.

Rexwald Brown introduced a discussion of the subject of the City Health Department, and moved that:

"The City Manager be urged to secure at once, in conformity with the City Charter, a trained sanitarian at an adequate salary, as head of the City Health Office, that the department may be reorganized to function in conformity with the needs of the city."

This was seconded by Ullman, and after discussion passed unanimously.

New St. Francis Hospital Occupied—The patients housed in the old St. Francis Hospital, Santa Barbara, have been transferred to the new building recently completed and which has been under construction for months. The Rev. Father William Clark, chaplain of the hospital, and Father Joseph Rhode, vice-provincial of the old Mission, officiated at the opening ceremonies held on September 11, although the official dedication of the building will not take place until January. The new hospital contains more than sixty-five rooms, and in an emergency can care for more than one hundred patients, it is stated.

SONOMA COUNTY

Sonoma County Medical Society (reported by N. Juell, secretary)—The society met at Santa Rosa, October 11, with thirteen members present, twenty-two absent, and two visitors. The program consisted in a report of a case, by Marguerite J. Fulmer of Santa Rosa, of chronic diarrhoea in a child, caused by intolerance of starch and fat, and relieved by exclusive protein diet. A discussion of pituitary diseases and tumors, with presentation of cases of acromegaly; pituitary tumor causing nasal and gustatory hallucinations, and a case of Froelich's syndrome, tumor, eye lesions, X-ray plates, operative procedure, and end results was given by Clement H. Arnold of San Francisco.

Councilor McLeod reported the action of the council at its recent meeting regarding medical and indemnity defense, as well as proposed extension courses.

A memorial tribute to the late Jackson Temple was read, and is published in another part of the Journal.

STANISLAUS COUNTY

Stanislaus County Medical Society (reported by R. E. Maxwell, secretary)—The society met on October 12, at Hotel Modesto, beginning with dinner. The meeting was called to order by Presi-

dent McPheeters. Members present: B. F. Surrhyne, Carl B. Benson, F. R. McKibbin, J. R. Hosmer, J. K. Morris, J. L. Hennemuth, J. C. Robertson, Walter Smith, L. D. Mottram, John A. Cooper, C. E. Finney, E. R. McPheeters, E. F. Reamer, Hugh Smith, J. W. Morgan, E. V. Falk, G. Chipman, R. E. Maxwell. Visitors: Didier of Crows Landing, Edwin I. Bartlett of San Francisco.

Miss Myrtle Gray, city school nurse, addressed the society, with a report of her work accomplished in the past two years. She asked for suggestions from and co-operation with the Modesto physicians.

Frank Holtham, city sanitary inspector of Modesto, appeared before the society, asking that a committee of five physicians be selected and appointed to act as a medical milk commission, in order that dairies who desired to meet the requirements thereof might have the distinction of marketing "certified milk." President McPheeters stated that he would appoint such a committee in the near future. Holtham filed a copy of "Spreading the Gospel of Clean, Raw Milk," with the secretary for reference.

E. V. Falk presented a case report of a fracture at lower extremity of humerus that resulted in a status of myositis ossificans. X-rays of the case were displayed.

E. F. Reamer reported that the Modesto Chamber of Commerce did not make any contribution to aid in paying for the A. M. A. convention program booklet advertising Stanislaus County.

R. W. Brace, formerly of Ripon but now residing in San Diego, was granted a transfer from this society.

Edwin I. Bartlett of the University of California addressed the society on "Aspects of Cancer of the Breast," supplemented by lantern-slides. Bartlett's address was practical and interesting and free from theoretical technicalities, and a vote of thanks was extended him.

Treatment of Encephalitis—For more than two years Ross Moore, Los Angeles (Journal A. M. A., September 15, 1923), has been treating certain patients showing symptom groups referable to basal ganglions by injecting intraspinally their own blood serum, either straight or inactivated. Twelve or fifteen cases of chronic paralysis agitans have been treated by this method. In more than half these cases, improvement occurred, temporary in nature, but of a quality different from that seen in the course of other treatment. This improvement has been usually in the nature of muscular relaxation. Relief from tremor has not been marked. All patients having a well-developed tremor of long standing continued to have it even though very great muscular relaxation was secured. There were several cases of very acute encephalitis in which the progress was apparently uninfluenced by the injections. There appeared to be overwhelming infection, as if the protective mechanism of the body was not functioning. Rosenow's experimental antiencephalitis serum was used in half a dozen cases. In four cases it was given intravenously twenty-four hours before blood was taken for intraspinal use. In the other two it was given intraspinally. Although results were negative, the efficacy of the serum is not disproved thereby, because the cases treated were very extreme ones. In the present state of our knowledge we are unable to say just when nerve cells that are being attacked by infectious disease or toxic processes die. They may be poisoned and inactive functionally a long time before they actually die. If they are inactive functionally, their inactivity will give rise to the same symptoms as their later death. Functional inactivity anywhere in the body is amenable to treatment. Therapeutic effort in the immediate future should be along two lines: (a) an increase in the antitoxic qualities of the blood serum used for injection, and (b) application of the serum more directly to the seat of the trouble.

Nevada State Medical Association

HORACE J. BROWN, M. D., Reno.....President
 CLAUDE E. PIERSALL, M. D., Reno....Secretary-Treas.
 G. L. SERVOS, M. D., Reno....Assoc. Editor for Nevada

REPORT OF THE TWENTIETH ANNUAL MEETING

First Meeting—September 28, 9:55 a. m.

The twentieth annual meeting of the Nevada State Medical Association was called to order by the first vice-president, A. Huffaker, at 9:55 a. m., at Bowers mansion. On motion the reading of the minutes was laid over until the regular business meeting. J. E. Rickard moved that the secretary be instructed to convey to our president, J. L. Robinson, our sympathy in his illness and our regrets that he is unable to be present. Seconded by J. T. Rees, M. A. Robison moved an amendment to include George McKenzie in the resolution. Amendment accepted by proposer and second. Motion carried. After a few remarks of welcome by the vice president, he opened the regular program by reading the president's address, after which the first paper of the scientific program was called for. The program was as follows:

A. W. Morton, San Francisco—"Report of a Case of Acute Osteomyelitis of the Femur." Discussed by J. T. Watkins, R. A. Bowdle, C. F. Welty, A. P. Lewis.

William N. Kingsbury, Reno—"Generalized Osteitis Fibrosa Cystica." Discussion by A. W. Morton, T. W. Bath, A. R. Kilgore.

James T. Watkins, San Francisco—"Infection of Certain Lymphatic Glands which Stimulate Tuberculous Disease of Neighboring Joints." Discussed by A. R. Kilgore, W. A. Shaw, W. M. Edwards, J. E. Pickard, W. N. Kingsbury.

Charles P. Knight, U. S. P. H. S., Washington, D. C.—"Some Observations on Health Conditions in Nevada." Discussed by T. W. Bath, R. A. Bowdle, R. H. Richardson, W. H. Hood, H. J. Brown, M. R. Brawner.

At this point we adjourned for lunch, which was served on the open front veranda of the mansion. Called to order at 1:30 p. m.

Martin Molony, San Francisco, opened the afternoon session with his paper on "Congenital Diverticulum of the Posterior Urethra, with Some Remarks on the Modern Method of Treating Chronic Seminal Vesiculitis. Illustrated by lantern slides. Discussed by G. F. Farman, B. H. Caples, W. H. Hood, R. St. Clair, and A. Huffaker.

Thomas Wilbur Bath, Reno—"Resumé of the Treatment of Septic and Aseptic Wounds." Discussed by C. G. Wilson, M. L. Herzig, C. L. Hoag, C. P. Knight, R. St. Clair, A. W. Morton, S. M. Sproat and C. F. Welty.

R. A. Bowdle, East Ely—"Injuries to the Astragalus, Report of a Case." Discussed by C. L. Hoag and R. A. Bowdle.

Charles L. Tranter, San Francisco—"Functional Recovery Following Operative Treatment of Brain and Nerve Injuries." Illustrated by lantern slides. Discussed by S. K. Morrison, C. F. Welty, A. P. Lewis, and A. W. Morton.

Maxmillian L. Herzig, Seattle, Wash., Member of this Association—"Undescended Testicle Complicating Acute Appendicitis, Report of a Case." Discussed by S. M. Sproat, C. L. Hoag and M. L. Herzig.

George F. Farman, Los Angeles—"Some Types of Chronic Recurrent Pyelitis and Their Treatment." Discussed by M. Molony and G. F. Farman.

Second Meeting—September 28, 8 p. m.

The business meeting was called to order by the second vice-president, R. H. Richardson, in the ab-

sence of the president and first vice-president. W. A. Shaw moved that the reading of the minutes be dispensed with. Seconded by C. E. Piersall. Motion lost. The minutes of the last regular and special meetings were read and approved.

A communication from the American Medical Association regarding clinical laboratories was read. Moved by M. A. Robison, seconded by W. M. Edwards, that it be referred to the Judiciary Committee to take such action as may seem necessary, and to reply to the letter. Carried.

A communication from The American Peace Award Committee was read. This referred to the \$100,000 award offered by Edwin Bok for the best plan to promote peace. Moved by M. A. Robison, seconded by M. R. Walker, that communication be laid on the table. Carried.

Communication from the California State Medical Society, regarding subscriptions to the California Medical Journal, read. Moved by M. A. Robison, seconded by T. W. Bath, that our annual dues be raised to \$7, and the extra \$2 be sent to the California Medical Journal so that our members may receive that publication. Carried.

The Committee on Necrology reported the deaths of G. E. Leavitt of Yerington, and W. D. Row of Carlin, and presented resolutions. Moved and seconded that resolutions be adopted. Carried.

The Judiciary Committee reported its activities during the past year, with especial reference to the work done during the recent session of the Legislature, which included work on the bills to register nurses, establish public hospitals, personnel of the medical examining board, prohibition, the handling of poisons by general merchandise stores, and the Sheppard-Towner bill. Moved by C. E. Mooser, seconded by A. P. Lewis, that the report be accepted. Carried. The delegate to the A. M. A. then made his report. Moved by A. P. Lewis, seconded by C. E. Mooser, that report be accepted. Carried.

The following officers were elected for the year 1924: President, Horace J. Brown, Reno; first vice-president, William M. Edwards, Yerington; second vice-president, A. C. Olmstead, Wells; secretary-treasurer, Claude E. Piersall, Reno; trustee for three years, A. Parker Lewis, Reno; associate editor of the California Journal, G. L. Servos, Reno.

The secretary then presented the names of the following as applicants for membership: George W. Green, Ely; John B. McCann, Tonopah; R. L. Guffey, Tonopah; W. F. Boylan, Bridgeport, Cal.; Marc H. Crocker, Winnemucca; Mary H. Fulstone, Smith; F. J. Crane, Round Mountain; F. C. Pache, San Diego, Cal. (reinstated).

Besides these applicants there were a number elected by the Washoe County Society, on whom it was not necessary for the State association to vote. Moved by A. P. Lewis, seconded by M. A. Robison, that all applications be voted on at once. Carried. Moved by A. R. DaCosta, seconded by M. M. Carmichael, that applicants be elected to membership. Carried.

S. K. Morrison announced that the Washoe County society would pay any deficit in the expenses of the meeting. Moved by H. J. Brown, seconded by C. E. Piersall, that a vote of thanks be tendered the Washoe County society. Carried.

C. E. Mooser moved, seconded by S. K. Morrison, that a vote of thanks be extended to our visitors, and that those of them who have not heretofore been elected as honorary members be now so elected. Carried.

A. P. Lewis moved, seconded by T. W. Bath, that a vote of appreciation of the services of the retiring secretary-treasurer be extended to him. Carried.

In the matter of the time and place for holding the next annual meeting, it was moved by M. A. Robison, seconded by A. P. Lewis, that the selection be left to the incoming officers, as before. Carried. There being no further business, adjournment was

declared until 9:30 a. m., Saturday, when the scientific program was resumed at Bowers Mansion.

Third Meeting, September 29

Meeting called to order at 9:45 a. m., at Bowers Mansion, by A. Huffaker, first vice-president, who introduced as our most prominent guest of honor, Ray Lyman Wilbur, president of the American Medical Association, and president of Stanford University. Wilbur addressed the association for twenty-five minutes in his usual able and entertaining manner, and made a profound impression upon his audience.

Carl G. Wilson, Palo Alto, Cal., then continued the program with a paper entitled: "A Plea for Improvement in Post-Operative Care of Laparotomy." Discussed by A. R. Kilgore, A. P. Lewis, C. L. Hoag, A. W. Morton, R. A. Bowdle, J. T. Watkins, M. L. Herzig.

William A. Shaw, Elko—"A Peculiar Manifestation of Focal Infection. Treatment and Apparent Cure; Three Case Histories." Discussed by A. W. Morton, C. F. Welty, C. P. Knight, E. S. duBray, R. H. Richardson, A. Huffaker.

Alson R. Kilgore, San Francisco—"Syphilis as a Pre-Cancerous Condition." Discussed by Walter Wessels, Ray Lyman Wilbur, C. F. Welty, G. F. Farman, and A. Huffaker.

Claude E. Piersall, Reno—"Present Status of X-ray and Radium Therapy." Discussed by A. R. Kilgore, M. R. Walker, C. F. Welty, and C. E. Piersall.

Cullen F. Welty, San Francisco—"The Care of the Hearing Apparatus." Discussed by M. L. Herzig.

Carl L. Hoag, San Francisco—"The Importance of Selecting Proper Treatment in Each Type of Goiter."

Raymond St. Clair, Oakland, Cal.—"Exophthalmic Goiter. Importance of Early Diagnosis; Report of Four Cases." The two papers above were discussed by C. P. Knight, T. W. Bath, M. A. Robison, M. L. Herzig, C. L. Hoag, and R. St. Clair.

S. M. Sproat, Portola, Cal.—"Perforative Appendicitis. Appendectomy vs. Drainage." Discussed by M. L. Herzig, and C. L. Hoag.

Walter Wessels, Los Angeles—"Errors in Abdominal Diagnosis." Discussed by M. A. Robison, A. J. Hood (Elko), and W. Wessels.

Ernest S. duBray, San Francisco—"Diet Adjustment and Insulin Therapy in Diabetes Mellitus." Discussed by W. Wessels, C. W. West, and I. J. Sellers.

B. H. Caples, Reno—"Bladder Decompression." Discussed by G. F. Farman.

This completed the program, and on motion and second the association stood adjourned sine die. A banquet at 9 p. m. and a barbecue picnic at Pyramid Lake, September 30, concluded a most successful meeting.

HORACE J. BROWN, Secretary.

The following members were in attendance at various times during the meeting: A. Huffaker, M. R. Walker, W. M. Edwards, A. P. Lewis, C. E. Mooser, W. J. Circe, T. W. Bath, L. V. Smith, Alex McIntyre, G. L. Servoss, J. W. Davis, W. C. Lucas, Anna DeChene, J. E. Pickard, V. A. Muller, H. L. Dalby, W. N. Kingsbury, S. K. Morrison, R. St. Clair, Donald Maclean, M. M. Carmichael, C. W. West, D. A. Turner, M. R. Brawner, J. T. Rees, M. A. Robison, J. A. Fuller, H. J. Brown, B. H. Caples, M. L. Herzig, C. E. Piersall, W. H. Riley, A. J. Hood (Elko), G. L. Dempsey, W. A. Shaw, R. A. Bowdle, R. H. Richardson, E. E. Hamer, W. H. Hood, A. J. Hood (Reno), G. M. Gardner, A. R. DaCosta, A. C. Olmstead, W. L. Samuels, C. H. Lehnars.

The following visitors were also present at various times during the meeting:

A. W. Morton, C. L. Tranter, R. C. Glann, Martin

Molony, I. J. Sellers, S. M. Sproat, G. W. Tape, G. Y. Brown, Mrs. M. L. Herzig, C. F. Welty, C. L. Hoag, G. F. Farman, C. P. Knight, W. G. Young, A. L. Thompson, G. E. Pawbreen, Mrs. C. G. Wilson, J. T. Watkins, E. S. duBray, Walter Wessels, P. K. Watters, W. A. Lavery, Theo. Olmsted, Mrs. S. M. Sproat, B. Wilkinson, C. G. Wilson, A. D. McKenney, A. R. Kilgore, C. B. Cortright, W. W. Peterson, R. L. Wilbur, Mrs. O'Brien, E. Devan.

J. LaRue Robinson, Reno, past president of the State association, has been confined to his home as the result of a gunshot wound in his right foot, received September 17, when his gun was accidentally discharged.

Granville E. Leavitt (Yerington), Cooper Medical College, 1903, was drowned September 18 near Wellington, Nev., while hunting ducks. Age 51 years.

William D. Row, Carlin, College of Physicians and Surgeons, Baltimore, 1883, died in a hospital in San Francisco, September 19. Age, 62.

W. W. Cook, Ely, has disposed of his practice and gone to Sebring, Fla., for the winter. He will return to Nevada in the spring, and resume practice in a new location.

A Side Light from the Source on Osteopathy—In 1874, Andrew T. Still founded osteopathy. He tells about it in his autobiography. He tried to get started in Kansas, but the powers at Baldwin University refused to permit him to expound his doctrines at that institution. In May, 1875, he was in Kirksville, Mo. It appears that he rather anticipated having a hard time, and he tells that his wife promised to stand by him and help him fight his battle. At this point in his story he presents a little incident which we have thought worth quoting:

"I did not tell her [his wife] that when I came to Missouri I found a letter addressed to my brother Edward, from brother Rev. James M. Still of Eudora, Kans., stating that I was crazy, had lost my mind and supply of truth-loving manhood. I read it and thought, as the eagle stirreth up her nest, so stir away, Jim, till your head lets down some of the milk of reason into some of the starved lobes of your brain. I believed Jim's brain would ripen in time, so I let him pray, until at the end of eighteen years he said:

"Hallelujah, Drew, you are right; there is money in it, and I want to study 'Osteopathy.'" (Journal A. M. A., September 29, 1923.)

Active Immunization Against Diphtheria in Private Practice—Frank C. Neff, Kansas City, Mo. (Journal A. M. A., September 1, 1923), urges that the medical profession be aroused to the need and usefulness of active immunization to diphtheria. Routine private practice must include the education of families in the use of toxin-antitoxin. It is obvious that the medical profession will be the final authority with the public as to the desirability of diphtheria immunization. The systematic administration of toxin-antitoxin is easy, and if employed in private practice the demand for it will eventually reach throughout the community. The use of refined toxin-antitoxin as now available is safe, and the physician need have no hesitancy in making diphtheria immunization a part of his regular work. It is conservative to state that 90 per cent of persons receiving toxin-antitoxin develop immunity, and that there is a small percentage of persons who develop antitoxin poorly, if at all. That there are a few exceptions can be recognized. No child should be accepted as certainly immune until a negative Schick test is obtained.

BOOK REVIEWS

Food for the Diabetic. What to eat and how to calculate it with common household measures. By Mary Pascoe Huddleson. 75 pp. New York: Macmillan Company. 1923. Price \$1.25. A useful guide. It will prove a welcome manual for the doctor to put into the hands of his diabetic patients. L. E.

Digestive Disturbances in Infants and Children. (Annals of Roentgenology. A series of monographic atlases.) Roentgenologically considered by Charles Gilmore Kerley and Leon Theodore LeWald. Vol. 3. New York: Paul B. Hoeber. Price \$12.00.

A splendid atlas of roentgenograms of disturbances of the digestive tract in children. Its thoroughness and completeness do credit to the authors and its beauty to the art of bookmaking.

These monographs from the Annals of Roentgenology are monuments of the best there is in American workmanship. L. E.

Getting Ready To Be a Mother. A little book of information and advice for the young woman who is looking forward to motherhood. By Carolyn Conant Van Blarcom, R. N. 237 pp. Illustrated. New York: The Macmillan Company. 1922.

Carolyn C. Van Blarcom has written a very useful book to all interested in the problem of maternity.

It is written to be easily understood by the layman and reminds the patient that she must consult her physician early in pregnancy and at any time she has any complaint. It should be of much value in educating the expectant mother.

C. D. H.

BOOKS RECEIVED

A Textbook of Chemistry for Nurses. By Fredus N. Peters, Ph. D., Author of "Experimental Chemistry," "Laboratory Experiments," "Applied Chemistry," etc.; formerly Professor of Chemistry and Director of Laboratories, Kansas City College of Pharmacy; Professor Organic Chemistry Hahnemann Medical College; Instructor in Chemistry in Kansas City Central High School for twenty-three years; more recently Vice Principal. Illustrated. Second Edition. St. Louis: C. V. Mosby, 1923.

Principles of Bacteriology. By Arthur A. Eisenberg, M. D., Director of Laboratories, St. John's Hospital; Pathologist to Lakewood Hospital; Serologist to St. Ann's Hospital, Cleveland; Director of Laboratories, Mercy Hospital (Canton, Ohio). Second Edition. St. Louis: C. V. Mosby Company, 1923.

Obstetrics for Nurses. By Charles B. Reed, M. D., Obstetrician to Wesley Memorial Hospital, Chicago. 144 illustrations, including two color plates. St. Louis: C. V. Mosby Company, 1923.

The Normal Child: Its Care and Feeding. By Alan Brown, M. D., Physician in Chief to the Hospital for Sick Children, Toronto; Associate Professor of Medicine in charge of Pediatrics, University of Toronto, etc., etc. The Century Co., New York and London, 1923.

Physical Diagnosis, By Richard C. Cabot, M. D., Professor of Medicine in Harvard University, formerly Chief of the West Medical Service at the Massachusetts General Hospital. Eighth Edition. Revised and enlarged, with six plates and 279 figures in the text. New York: William Wood and Company. 1923.

The Notebook of an Electro Therapist, By Mel R. Waggoner, M. D. Illustrated. Published by the McIntosh Electrical Corporation, Chicago, Illinois. 1923.

Pennington's "Diseases and Injuries of the Rectum Anus and Pelvic Colon." 679 illustrations, including two plates. Cloth \$12.00. By J. Rawson Pennington, M. D., F. A. C. S., Proctologist to the Columbus Hospital, Veterans' Hospital No. 30, and the United States Marine Hospital. Chairman of the Scientific Assembly, Section on Gastro-Enterology and Proctology, American Medical Association. Published by P. Blakiston's Son & Co., 1012 Walnut street, Philadelphia.

UNIVERSITY OF CALIFORNIA

Office of the President

September 28, 1923.

The Physicians of the State of California:

Gentlemen: The work which Professor Kofoid of the University of California has been conducting for the last five years on the incidence of intestinal parasitism has thrown much light upon some forms of obscure and chronic human diseases. The accurate determination of these infections at present requires considerable technical skill. It is hoped that in the not distant future a larger number of competent technicians may secure the training necessary to extend this service more widely in the usual professional channels. In the meantime it is highly desirable that Professor Kofoid be able to complete his atlas of human intestinal parasitic infections, and also that a number of problems still obscure be carried as near as possible to solution in his laboratory.

To this end the University, through Professor Kofoid's laboratory, will make these examinations for physicians in accordance with instructions issued by the laboratory. The University does not seek to enter the commercial field in any way, and no charge will be made for this service. Any gifts which physicians, or their patients, or other friends of research in this field may wish to make to the Kofoid Research Fund will be administered by the Board of Regents of the University in support of this work.

The expense of the routine examinations made at the request of physicians, dispensaries, public health centers, etc., is now met solely by gifts to this Fund. The State Board of Health through its Hygienic Laboratory at Berkeley co-operates to the extent of sending out the containers and the reports. Applications for containers may be sent to Professor C. A. Kofoid, Zoology Building, University of California, Berkeley.

Yours faithfully,

W. W. CAMPBELL, President.

Chronic Actinic Cheilitis—Samuel Ayres, Jr., Los Angeles (Journal A. M. A., October 6, 1923), calls attention to a chronic inflammatory disorder of the lip, due apparently to the actinic or chemically active rays of sunlight. This chronic, scaly, crusted inflammation of the lips, especially of the lower lip, Ayres designates "cheilitis actinica chronica," or "cheilitis exfoliativa (actinica chronica)." This disorder is usually recurrent during the summer months. Protection from sunlight, and soothing local applications offer the best method of prevention and treatment. Since the etiology and treatment of this variety of cheilitis differ from other varieties, it is felt that this disease should be recognized as a distinct entity.

Pharmacology and Therapeutics

COUNCIL ON PHARMACY AND CHEMISTRY OF THE A. M. A.

(Reported by W. A. Puckner, Secretary)

The Council on Pharmacy and Chemistry reports a number of new remedies admitted to New and Non-official Remedies, as well as some interesting data about other remedies:

Abbott Laboratories—Argyn Tablets (see New and Non-official Remedies, 1923, p. 330).

Parke, Davis & Co.—Tablets Tuberculin B. E. (P. D. & Co.); Tablets Tuberculin T. R. (P. D. & Co.); Malt Extract (Unmedicated) (P. D. & Co.); Malt Extract with Cod Liver Oil (P. D. & Co.); Tobacco Protein Extract Diagnostic (P. D. & Co.); Goldenrod Pollen Protein Extract Diagnostic (P. D. & Co.); Sal Ethyl Capsules, 5 minims.

Wilson Laboratories—(New and Non-official Remedies, 1923, p. 212)—Tablets Ovarian Substance (Wilson), 2 gr.; Tablets Ovarian Substance (Wilson), 5 gr.; Capsules Ovarian Substance (Wilson), 2 gr.; Capsules Ovarian Substance (Wilson), 5 gr.; Tablets Ovarian Residue (Wilson), 2 gr.; Tablets Ovarian Residue (Wilson), 5 gr.; Capsules Ovarian Residue (Wilson), 5 gr.

NEW AND NON-OFFICIAL REMEDIES

Thromboplastin-Lederle—An extract of cattle brain in physiological solution of sodium chlorid prepared according to the method of Hess. For a discussion of the actions, uses and dosage of brain extract see New and Non-official Remedies, 1923, p. 129, under Fibrin Ferment and Thromboplastic Substances. Thromboplastin (Lederle) is marketed in 20 cc. vials which bear an expiration date. Lederle Antitoxin Laboratories, New York. (Jour. A. M. A., September 15, 1923, p. 929.)

Malt Extract (Unmedicated)—(P. D. & Co.)—A preparation essentially similar to extract of malt, U. S. P. (see New and Non-official Remedies, 1923, p. 177), but containing 10 per cent of glycerin. 1 gm. of the extract converts 5 to 7 gm. of starch to maltose and dextrin in 30 minutes at 40 C. Parke, Davis & Co., Detroit.

Malt Extract with Cod Liver Oil (P. D. & Co.)—Each 100 cc. contains Norwegian cod liver oil, 25 cc. and malt extract (unmedicated) P. D. & Co., 75 cc. Parke, Davis & Co., Detroit.

PROPAGANDA FOR REFORM

El Zair—This is quackery's latest offer of an elixir of life. The nostrum is brought to the attention of the public by El Zair, Inc., New York. The firm claims that the elixir of youth has at last been found. Much is made of the endorsement which the late W. T. Stead is stated to have given the nostrum. El Zair is to be dissolved in water and applied by sponging the body with it daily. The A. M. A. Chemical Laboratory analyzed El Zair and reported that essentially it may be considered to consist of one part of glacial acetic acid and three parts of magnesium sulphate (Epsom salt) perfumed with oil of bergamot. The contents of a bottle of El Zair are to be dissolved in a pint of water and, therefore, an essentially similar solution can be made by dissolving 2½ ounces of Epsom salt in a pint of distilled vinegar. (Jour. A. M. A., September 1, 1923, p. 768.)

Some More Miscellaneous Nostrums—The following products have been the subject of prosecution

by the Federal authorities charged with the enforcement of the Food and Drugs Act: Cowan's Rheumatism Herb (Rheumatism Herb Co.), consisting of dried and moldy leaves of a species of eucalyptus. Jad Salts (Wyeth Chemical Co., Detroit—not John Wyeth Bros., Philadelphia), consisting essentially of citric and tartaric acids, salt, baking soda, sodium phosphate and very small amounts of hexamethylenamin, lithium carbonate and potassium bicarbonate. Crane's Quinin and Tar Compound (Crane Medicine Co.), consisting essentially of quinin, sodium salicylate, ammonium chlorid, Epsom salt, oil of anise, tar, menthol, table salt, calcium phosphate, sugar, alcohol and water. Crane's Liver Pills (Crane Medicine Co.), consisting essentially of aloes and magnesium carbonate. Crane's Kidney Pills (Crane Medicine Co.), containing methylene blue, hexamethylenamin, plant extractive and iron sulphate. Tekol (Colonial Tablet Co.), containing ground celery seed and cocoa with about a half grain of caffeine in each tablet. Veronico Water (Veronica Medicinal Springs Water Co.), containing magnesium sulphate (Epsom salt), sodium nitrate, sodium chlorid (common salt), calcium bicarbonate, calcium sulphate and magnesium chlorid. (Jour. A. M. A., September 15, 1923, p. 946.)

MEDICAL ECONOMICS

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The spirit of service is more and more reflected in our advertising pages as each month new departments are being opened by our advertisers and new services offered. For instance, in this issue—

Victor X-ray Corporation place at your service a corps of men trained and placed on the Pacific Coast to serve Victor users primarily and all others interested in X-ray and physiotherapy work. A telephone call, telegram or letter will bring one of these men to you immediately, to assist in the preparing of plans, to suggest equipment adapted to your needs, render service on your present equipment or give help in operative technique. Get acquainted with the man in your particular district and let him help you.

Reid Bros. announce the establishment of a retail store in a location convenient to the up-town offices, to better serve physicians and surgeons, this in addition to their regular show-rooms and factory.

Clark-Gandion Truss Company have installed a completely equipped shop for the making of all kinds of orthopedic appliances, belts, etc. They have seventeen busy people at your command, with offices on both sides of the bay.

Medical and Scientific Books—Mr. J. W. Stacey, formerly of The Emporium, is opening at 228 Flood Building, San Francisco, a complete store of medical and scientific books. Mr. Stacey is well known to our readers, and his new service will be appreciated by his many friends and customers of the past.

Parke, Davis & Company—Dr. Earl Miller has been appointed director of the Department of Experimental Medicine, of Parke, Davis & Company, Detroit, to fill the vacancy following the death of Dr. Ezra Read Larned, who was the originator and organizer of this department and occupied the position as head of the department until his death. Dr. Miller was assistant to Dr. Larned for twelve years and has a wide acquaintance among medical men interested in clinical research work.

THE ABSORPTION OF DRUGS

There seems to be a more or less general assumption that if a drug is soluble in water it will be absorbed in a satisfactory manner when introduced into the alimentary canal or injected into the subcutaneous or intramuscular tissues. A few seem to take the opposite stand, namely, that most drugs are absorbed so poorly from any channel of administration that, to secure therapeutic effects, they must be injected intravenously. Both of these views, according to Cary Eggleston, New York (Journal A. M. A., August 11, 1923), are obviously erroneous. The matter of solubility of a drug in water, he says, bears no necessary relation to the question of its absorbability from the gastro-intestinal tract. Food may retard absorption, through too great dilution of a drug; by the large amount of colloid present; by combining with the drug to form a less absorbable compound, or in other ways. No general rules can be laid down as to the influence of meals on the absorption of drugs, hence this factor must be determined separately for each drug. The increased circulation during digestion may facilitate absorption, and it is probable that mild degrees of congestion from other causes have a similar effect. Several drugs have been shown to be absorbed more promptly when administered in dilute alcohol than when given in water. Other mild irritants, by inducing slight local congestion, will probably be found to produce the same result. If the drug itself is irritant, this property may facilitate its absorption if it is administered in sufficiently dilute solution. Higher degrees of local irritation, however, seem to delay absorption. Whether this is due to injury to the epithelium is not known, but such a mechanism seems probable. Local ulceration of the mucosa, on the other hand, may enhance the absorption of some drugs, especially those toward which the membrane is normally more or less impermeable. Anemia of the alimentary canal probably always impairs absorption of drugs as well as of the products of digestion. The rate of absorption after oral administration may be determined for man in different ways. The degree of uniformity of absorption is just as important as is the rate. Some drugs seem to be taken up from the rectum quite as rapidly and as effectively as when given by mouth, some possibly better; but most are probably much less satisfactorily absorbed.

The liver is capable of fixing and destroying or otherwise eliminating a great many drugs. This fact has been used as one of the arguments against oral administration, as compared with other methods, since drugs so given generally enter the systemic circulation only after initial passage through the liver. Even with a drug that is fixed or destroyed rapidly, a more or less considerable proportion will usually escape change in the liver and enter the general circulation. The oral dose of such a drug will, therefore, merely have to be made sufficiently large to allow for the portion which is destroyed during the first passage through the liver. The assumption that liver fixation or destruction is a serious bar to effective oral administration is not warranted by the common experience of therapeutists. The relation between the rate of elimination and the duration of action of a drug on the one hand, and the rate of its absorption from different channels of administration on the other, determines the mode of administration, the dosage and the frequency of repetition of drugs, except for those few agents whose actions may prove life-saving in circumstances of great urgency, such as strophanthin in cardiac failure and epinephrin in shock.

Until much more definite information is available, oral administration must unquestionably remain the most satisfactory and the most precise method. The dose of a drug may be defined as that amount which will just suffice to produce the desired effect in a given patient under the particular existing conditions. This dose cannot be known in advance, for it is not the same in different patients, nor even in

the same patient at different times. By oral administration, fractions of this dose can be given as often as necessary, until the desired dose is absorbed and the action sought has been developed. By varying the size of the fractions and the frequency of repetition, the required dose can be approximated with greater certainty and precision than by any other method, and the rapidity with which the effects are developed may also be controlled with some degree of accuracy.

The Workmen's Compensation Act—The Workmen's Compensation Insurance Act was at first viewed with alarm both by the employer and the medical profession. It was a labor measure and felt to be revolutionary socialism. At the present time it is acknowledged to be a real protection to the employer as well as the employee. Due to the efforts of the council of the State medical society, this act is now becoming a satisfactory arrangement for the medical man.

The insurance carriers started furnishing medical services under this act without reference to the medical profession, set their own fee schedule, required unnecessarily elaborate reports and dictated medical policy as they saw fit. The man who was doing compensation work dealt as an individual with the insurance company.

The council of the State society has put more work upon this insurance problem than upon any other work that has confronted it; for, at first, the insurance carriers refused to recognize or to meet with it, much less co-operate. Four years of effort at a tremendous personal expense has been given to obtain an arrangement that is just to the medical man as well as efficient protection to the insured.

There have been four tangible results that are tending to make the operation of this law satisfactory from a medical standpoint:

1. The insurance carriers have come to deal with the medical profession as a whole, and problems of general policy are made with the advice and consent of the medical society through conferences and written agreements. The ordinary medical man knows nothing of the insurance problems, can form no estimate of rates or fees and is in no position to dictate or defend himself. The council of the State society has acquainted itself with the whole insurance problem, and can and does deal intelligently with the insurance carriers.

2. The State society has obtained the payment of more adequate fees for insurance work. There has been a flat raise of 25 per cent and a real flexibility in emergency procedures, and these changes are now embodied in the rulings of the State Compensation Commission. The entire field of fees was canvassed by the committee and the insurance companies, and such an adjustment could never have been obtained without organized effort.

3. The elaborate and burdensome report system has been simplified and the necessary clerical work reduced to a minimum. The council, through its committee, instigated an investigation of all insurance forms and then produced records and report blanks of its own that represented the standard required by the medical profession as adequate and satisfactory. Most of the insurance carriers have adopted these forms as recommended.

4. The council has extended the insurance field so that the work is open to practically the entire membership of the society. A survey has been made of the qualifications, specialties and willingness to co-operate of each of the society members and such records have become the basis for designated insurance lists. Instead of the work being limited to a few, the council has made it possible for any member of the society to do insurance work.

These are a few of the problems of industrial insurance that are being solved by the State medical society as the result of intensive work by the committees backed by the entire organization.—(Lyell C. Kinney, M. D., Bulletin of the San Diego County Medical Society, August 10, 1923.)

NEW MEMBERS

San Francisco—Elliott B. Tobias, Aime N. Fregean, Elwood R. Oleson, Herbert S. Thomson, Leon C. Garcia, Irwin Wallace, Louis J. Overstreet, John C. W. Taylor, William H. Barrow.

Los Angeles—Otto R. Brown, Victor E. Verne, J. Park Dougall, Philip I. Hoke, R. A. Krause, H. A. MacMillan, George F. Schenck, Vincent Bonfiglio, William Paul Cook, Leo B. Auerbach, Edward G. Boyd, A. Lincoln Desser, Clement F. Dougherty, Louie Felger, H. G. Hambleton, W. M. Hoel, R. W. Karras, Francis B. Kellogg, Homer R. Keyes, H. B. Lehmborg, Samuel M. Marcus, Benjamin M. Mikels, Alleyne von Schrader, Henry J. Weedn, Carlisle B. Wiley, Burnett W. Wright.

Santa Clara—Richard T. Glycer, Thomas B. Moore.

San Mateo—J. G. Null, M. D. Lessard.

Alameda—Karl E. Kennedy, William G. Donald.

Lassen-Plumas—James McCue.

San Diego—Roy V. Larzalere, James G. Omelvena.

Modesto—John K. Morris.

DEATHS

Barmore, William Alfred. Died at San Francisco, September 26, 1923, age 53. Graduate of the Medical College of Ohio, Cincinnati, 1891. Licensed in 1892. He was formerly a member of the San Francisco County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

Caldwell, Joseph Edmonds. Died at Glendale, October 3, 1923, age 68. Graduate of the Flint Medical College of the New Orleans University, 1881. He was a member of the Florida Medical Association and the American Medical Association.

Gnekow, Emilie Louisa. Died at Stockton, October 4, 1923, age 51. Graduate of the Northwestern University of Chicago, 1901. She was a member of the San Joaquin County Medical Society, the California Medical Association, and the American Medical Association.

Guidinger, Walter A. Died at Long Beach, September 18, 1923, age 42. Graduate of the Chicago College of Medicine and Surgery, 1907. Licensed in California in 1914. He was a member of the Los Angeles County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

Locke, Clayton W. Died at Lindsay, September 26, 1923, age 65. Graduate of the Louisville Medical College, 1888. Licensed in California in 1912. He was a member of the Tulare County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

Murphy, William Roe. Died at Los Angeles, October 18, 1923, age 55. Graduate of the College of Physicians and Surgeons, Los Angeles, 1918. He was a member of the Los Angeles County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

Newlon, William Henry. Died at Berkeley, October 30, 1923, age 60. Graduate of the College of Physicians and Surgeons, Keokuk, Iowa, 1890. He was a member of the Iowa State Medical Society and a Fellow of the American Medical Association.

Purves, John. Died at Oakland, August 12, 1923, age 56. Graduate of the College of Physicians and Surgeons, San Francisco, 1899. He was a member of the Alameda County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

Reardon, Thomas Buckhead. Died at Oroville, September 28, 1923, age 63. Graduate of the University of California Medical School, 1882. Licensed in California, 1885. He was a member of Butte County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

Row, William D. Died at San Francisco, September 19, 1923, age 61. Graduate of the College of Physicians and Surgeons, Baltimore, Maryland, 1883. He was a member of the Nevada State Medical Association and the American Medical Association.

Saylin, Abraham J. Died at Los Angeles, August 6, 1923, age 41. Graduate of the College of Physicians and Surgeons, Los Angeles, 1915. He was a member of the Los Angeles County Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

Stratton, Leon B. Died at Paso Robles, August 7, 1923, age 47. Graduate of the Saginaw Valley Medical College, Saginaw, Michigan, 1899. Licensed in California, 1901. He was a member of the San Luis Obispo County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

Obituary

MEMORIAL TRIBUTE TO THE MEMORY OF JACKSON TEMPLE, LATE A MEMBER OF THE SONOMA COUNTY MEDICAL SOCIETY

To Its Officers and Members:

Whereas, our much esteemed and beloved associate, Jackson Temple, has been called from the walks of earth to the other and better world, it is fitting that we, the surviving members of the Sonoma County Medical Society, should pay a last tribute to his memory.

Dr. Temple was born in Santa Rosa, March 9, 1879. His early education was acquired at Mount Tamalpais Military Academy, followed by attendance at the University of California, where he graduated in pharmacy, later taking up the study of medicine, winning his medical degree in 1906. He was well equipped for the practice of his profession, both by education and temperament. Optimistic, resourceful, foremost in scientific research, yet modest and retiring; always prompt to respond to the call of the afflicted; appreciative, generous, punctilious in ethics, possessed of patience, devotion, industry and talent, he was the ideal physician we were proud to honor as one of our most valued associates.

At the outbreak of the World War he was one of the first to offer his services to his country, and was the only representative of the medical profession from Santa Rosa to participate in military activities in France. Coming from distinguished lineage, he lived in this community during his entire life, and carried the name untarnished to the grave. While his departure means a distinct loss to the profession and to the public, it is fortunate that his example stands before us for emulation, and it is for us to profit by the observance of his manifold virtues.

N. JUELL, Secretary.